The Review of Austrian Economics

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A Theory of the Theory of Public Goods

Randall G. Holcombe

A public good, as defined by economic theory, is a good that, once produced, can be consumed by an additional consumer at no additional cost. A second characteristic is sometimes added, specifying that consumers cannot be excluded from consuming the public good once it is produced. Goods with these characteristics will be underproduced in the private sector, or may not be produced at all, following the conventional wisdom, so economic efficiency requires that the government force people to contribute to the production of public goods, and then allow all citizens to consume them. Simple observation of the real world suggests two problems with the application of public goods theory as a justification for government production. First, many public goods are successfully produced in the private sector, so government production is not necessary. Second, many of the goods government actually does produce do not correspond to the economist's definition of public goods, so the theory does a poor job of explaining the government's actual role in the economy. If public goods theory fails as a theory of public expenditure, why is it so firmly entrenched in the economic theory of the public sector? This paper develops a theory to explain the development and use of public goods theory as a justification for government production.

The paper begins by examining the theory of public goods. Public goods certainly exist, in the sense that there are goods that fit the economist's definition of public goods, but production in the public sector is neither necessary nor sufficient for the efficient production of public goods. A model that explains government involvement in the economy is then presented. Within this model, the production of national defense is explained as an institution that enables the government to protect and enhance its own wealth. Following this reasoning, national defense is produced by government because it furthers the private interests of those who run the government, not because it is in the public interest for the government to produce public goods. The model in this paper has more

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of an economic foundation than the theory of public goods, because it explains the production of national defense as the result of the rational self-interested decisions of individuals, rather than as a product of a benevolent government that acts in the public interest.

The model is then extended to show that public education serves a similar function by lowering the cost to the government of getting its citizens to further the government's interests. Public education gives the government more control over the educational system, and, more to the point, public education makes educators government employees, so educators have the incentive to further the government's interests. Public education furthers the government's interests by socializing students to make them better (more compliant) citizens, and by teaching a curriculum that portrays the government as an institution that furthers the public interest. Public goods theory is a part of this curriculum.

The first step in developing a theory of the theory of public goods is to examine the idea that goods with public-goods characteristics require government production for efficiency. Public goods theory can then be shown to be wanting as a positive theory of public-sector production. If public goods theory does not explain the activities of the public sector, why was it developed, and why does it remain a core concept in the teaching of public finance? This paper shows how it is in the best interest of those who run the government to promote public goods theory, and shows how educators have been given the incentive to develop and to teach public goods theory.

Public Goods

Economists define a public good as a good having one or both of the characteristics of nonexcludability and jointness in consumption. Nonexcludability means that it is difficult to keep people from consuming the good once it has been produced, and jointness in consumption means that once it is produced for one person, additional consumers can consume at no additional cost. Goods that are joint in consumption are also called collective-consumption goods or nonrival consumption goods, and the terms are used interchangeably here.

The most precise technical definition of a public good, and the definition that is most often referred to by economists, is Samuelson's definition, which says that a public good is a good that, once produced for some consumers, can be consumed by additional consumers at no additional cost. This is the jointness in consumption referred to above.[1] While this is the standard economist's

[1] Paul A. Samuelson, "The Pure Theory of Public Expenditure," *Review of Economics and Statistics* 36 (November 1954): 387–89; and idem, "A Diagrammatic Exposition of a Theory of Public Expenditure," *Review of Economics and Statistics* 37 (November 1955): 350–56.

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definition of a public good, economists have taken some liberty with the language in formulating the definition.[2] While economists give it a formal technical definition, in verbal analysis "public good" is often used in an ambiguous manner.

A dictionary defines public as "of, related to, or serving the community." For most people who hear it, including economists, the term conjures the image of a good available for all citizens to consume, and common examples used by economists, such as national defense and highways, are suggestive of the idea that a public good is a good produced by government, and generally available for the benefit of its citizens. Indeed, this more commonsense definition of public good was generally accepted by economists until Samuelson made the definition more precise, and at the same time altered its meaning.[3] Thus, on the one hand, professional economists define the term public good as something with the technical characteristics of jointness in consumption and nonexcludability. When they use the term in a discussion of the public sector, however, it conveys the connotation of government production. Indeed, when Samuelson rigorously defined the term, he also gave reasons why public-sector production is necessary for efficiency, creating a close link between the dictionary definition of the term and Samuelson's formal definition. The implication is that the technical definition is just a more rigorous variant of the dictionary definition.

The common name given to Samuelson's rigorous definition suggests that public goods are government-produced goods, implying that goods with the characteristics of jointness in consumption and nonexcludability ought to be produced by government. Perhaps this bias in the name is obvious, but it is an integral part of the application of the theory of public goods. An economist argues that a good has the characteristics of either jointness in consumption or nonexcludability, and then, because that makes the good a public good, implies that the good should be produced in the public sector.

[2]Randall G. Holcombe, *Public Finance: Government Revenues and Expenditures in the United States Economy* (St. Paul, Minn.: West Publishers, 1996), esp. chap. 5. This is an undergraduate public-finance textbook which discusses and explains the definition of public goods in detail, and raises some of the questions about public goods that are the subject of this paper.

[3]Richard A. Musgrave, *The Theory of Public Finance* (New York: McGraw-Hill, 1959), p. 44. In his classic public-finance treatise, Musgrave uses a somewhat tautological definition that fits the pre-Samuelson concept, defining public goods as "goods the inherent quality of which requires public production." He gives education and the military as examples, and defends them in a commonsense way by noting that there are compelling reasons for having both produced in the public sector. Of course, one might disagree with his assessment, but the point here is that prior to Samuelson's definition, public goods were thought of more generally (and less rigorously) as goods that are produced by government. See also the discussion by Dennis Epple and Richard E. Romano, "Public Provision of Private Goods," *Journal of Political Economy* 104, no. 1 (February 1996): 57–84, on private goods produced by government, and how the mainstream economic literature has been won over to Samuelson's definition, and away from Musgrave's.

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Is a public good a good that is produced in the public sector, or is it a collective consumption good, or a nonexcludable good, or all of the above? The nomenclature leads one to believe that there is good reason for goods with publicness characteristics to be produced in the public sector. Despite the deceptive use of language in the naming of public goods, the remainder of this paper will stick closely to the economist's definition of jointness in consumption and nonexcludability, and will examine critically the notion that public goods are more efficiently produced in the public sector.

Public Goods and Public Production

The name public goods suggests public-sector production, and Samuelson argued the merits of public-sector production when he first formalized the theory of public goods.[4] Samuelson argued that there is no good revealed-preference mechanism for public goods, so they will not be produced efficiently, if at all, in the private sector. Public-sector production is thus required for efficiency. Note that even the titles of Samuelson's articles show the implication that public goods, as he defines them, must be produced in the public sector. The titles of both articles refer to a theory of public expenditure rather than a theory of public goods.

In his second article, Samuelson recognized that there could be other definitions of publicness, and other theories of public expenditure, but reinforced the idea that goods with the collective-consumption characteristic he described would have to be produced in the public sector for efficiency reasons.[5] Because the idea is so closely associated with Samuelson, this characteristic of jointness in consumption is often referred to as Samuelsonian publicness. In the face of Samuelsonian publicness, markets fail to allocate resources Pareto-efficiently, and Samuelson's ideas on market failure were combined with others pursuing parallel lines of reasoning in other areas to generate a substantial literature on market failure. Bator synthesizes this literature by showing that there are numerous ways in which markets fail to be efficient, which points toward a policy of government intervention to correct the market failures.[6] By the end of the 1950s, public goods theory, as developed by Samuelson, was an integral part of public-expenditure theory.

The fact that some goods exhibit Samuelsonian publicness is not a matter of dispute, but the idea that Samuelsonian public goods must be produced in the public sector to allocate resources efficiently does not logically follow from the

[4]Samuelson, "The Pure Theory of Public Expenditure"; and idem, "A Diagrammatic Exposition of a Theory of Public Expenditure."

[5]Ibid.

[6]Francis M. Bator, "The Anatomy of Market Failure," *Quarterly Journal of Economics* 72, no. 3 (August 1958): 351–79.

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Samuelsonian publicness characteristic. One logical problem is that even if market production fails to reach the theoretical ideal of Pareto efficiency, there is no guarantee that government production will be any more efficient than private production. As Buchanan explains, if Pareto efficiency is used as the benchmark for success, then government can fail to allocate resources efficiently in the same way that markets can.[7] Thus, one would have to compare market versus government production by evaluating the real-world institutions in each case, rather than comparing the theoretical efficiency of Pareto optimality with the real-world performance of markets.

A second issue is the problem of revealed preference, which was well-recognized by Samuelson. If the market fails to get a true measure of revealed preference for public goods, can the government expect to do any better? Writers such as Tiebout, Clarke, and Tideman and Tullock have described how public-sector mechanisms could be designed to efficiently allocate public goods, helping support public goods theory as a foundation for government production.[8]

But revealed preferences exist in the private provision of Samuelsonian public goods as well. Minasian describes the advantages of revealed preferences for public goods by examining the market for television broadcasts.[9] If the broadcasts were financed by tax revenues, produced by the government, and distributed free of charge to viewers, then the government would have no way of telling which broadcasts were more valuable to its viewers. But if markets distributed the broadcasts, then producers could use market indicators if viewers paid for each viewing (as they do with motion pictures), or if advertisers paid and wanted their advertising to be shown with broadcasts that appealed to their consumers.[10]

If Samuelsonian public goods are sold on the market like movie tickets, then some inefficiency would result from the exclusion of individuals who valued the good, but by less than the market price. This inefficiency would have to be weighed against the efficiencies generated by the market's revealed-preference

[7]James M. Buchanan, "Public Finance and Public Choice," *National Tax Journal* 28, no. 4 (December 1975): 383–94.

[8]See Charles M. Tiebout, "A Pure Theory of Local Expenditures," *Journal of Political Economy* 64 (October 1956): 416–24; Edward H. Clarke, "Multipart Pricing of Public Goods," *Public Choice* 11 (Fall 1971): 17–33; and T. Nicolaus Tideman and Gordon Tullock, "A New and Superior Process for Making Social Choices," *Journal of Political Economy* 84 (December 1976): 1145–60.

[9]Jora R. Minasian, "Television Pricing and the Theory of Public Goods," *Journal of Law and Economics* 7 (October 1964): 71–80.

[10]Samuelson obviously does not agree with Minasian, but the issues involved in this debate are worth careful consideration, see Paul A. Samuelson, "Public Goods and Subscription TV: Correction of the Record," *Journal of Law and Economics* 7 (October 1964): 81–83.

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mechanisms. The advantages are much broader than just indicating what type of motion picture is most valuable to viewers. Innovations in markets, whether regarding locations, product types, or potential new markets, are best seen by those who work in those markets, and who have the potential to profit from innovations. The advantages of market production in this context have been described by Hayek and Kirzner[11] among others, and at least establish that Samuelsonian publicness by itself does not create a presumption that public production is more efficient than private production.

Yet another obvious problem with producing public goods through tax-financed public-sector production is that the tax system imposes an excess burden on the economy. The excess burden of taxation includes those costs of the tax system over and above the revenues collected, such as the disincentives caused by taxes, and the administrative and compliance costs that the tax system produces. Thus, at the very least, any inefficiencies of private-sector production would have to be weighed against the inefficiencies produced from using the tax system to raise revenue; yet the excess burden resulting from public finance is rarely mentioned when the public-goods argument is used to justify public-sector production.

A second characteristic of publicness is nonexcludability. A good is nonexcludable if it is prohibitively costly to keep people from consuming the good after it has been produced. The problem with nonexcludable goods is that if consumers cannot be excluded from consuming them, they will free ride and consume without paying, again resulting in underproduction of the good. Note that Samuelsonian publicness and nonexcludability are two completely distinct characteristics. A good could be Samuelsonian public, yet excludable, or nonexcludable but Samuelsonian private. For example, cable television systems often have premium channels which are scrambled to exclude non-paying customers. The premium channels could be extended at no additional cost to all viewers who have cable, so are Samuelsonian public, but the costs of exclusion are low enough that the cable company can extend the premium channels only to those who pay.[12] Likewise, Samuelsonian private goods that are nonexcludable are sometimes referred to as common-pool goods.[13]

[11] See Friedrich A. Hayek, "The Use of Knowledge in Society," *American Economic Review* 35, no. 4 (September 1945): 519–30; and Israel M. Kirzner, *Competition and Entrepreneurship* (Chicago: University of Chicago Press, 1973).

[12] Exclusion costs are paid by most vendors, whether they are selling public or private goods. Locks on vending machines and security guards at retail stores are resources employed to exclude non-paying customers from consuming the goods.

[13] Private arrangements can also be made to allocate nonexcludable but Samuelsonian private goods. For a discussion see Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (New York: Cambridge University Press, 1990).

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In practice, there is a tendency to confuse Samuelsonian public goods with nonexcludable goods, partly because typical examples of public goods share both characteristics. However, one characteristic does not imply the other, and each characteristic has its own separate argument regarding the inefficiency of private production. For Samuelsonian public goods, it is inefficient to exclude potential consumers who place any positive value on the good, whereas for nonexcludable goods, free riders result in a marginal value of the good to consumers that exceeds marginal cost. For Samuelsonian public goods, inefficiency occurs if people are excluded, whereas the inability to exclude people creates the inefficiency with nonexcludable goods. In both cases, underproduction results when compared to a theoretical ideal. However, as noted above, incentives in the market may be able to improve resource allocation when compared to government production, meaning that there can be no presumption that public production is more efficient than private production for public goods of either type.

Real-World Production of Public Goods

In practice, the market produces many nonexcludable Samuelsonian public goods. Television and radio broadcast signals provide examples of goods that are both nonexcludable and Samuelsonian public. Broadcasts are not sold directly to the viewing public in most cases but are financed through advertising, and advertisers can be excluded. This shows how market arrangements can be devised in innovative ways to overcome publicness problems, but adherents of public goods theory are critical of this example of the private production of a public good because they argue that it is not the public good that is sold, but rather the excludable good. Still, the example is worth noting because it shows the way that markets can respond by designing real-world solutions to theoretical problems.

Another example of a public good produced in the private sector is microcomputer software. Once the program is written, additional users can copy the program, making it available to additional users at no cost to existing users, so microcomputer software is Samuelsonian public. Because it is so costly to prevent such copying, it is also nonexcludable. Yet Bill Gates became one of the richest men in the world in a period of about a decade, selling a public good. This example is all the more interesting in the middle 1990s because, while microcomputer software is a public good, the computers that run the software are private goods, and in recent years the companies selling the public good on the market have been much more profitable than those selling private goods to the same markets. Given the significant advances that have been made in software, few people would argue that software would be more efficiently produced by the government than by the private market. The private market has been very successful at producing this public good.

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Consider microcomputer software within the context of the problems that supposedly arise in the production of public goods. Because of jointness in consumption, any positive price inefficiently excludes some consumers, but the fact that it is difficult to exclude users who copy the programs of others mitigates this problem, at least to a degree. Furthermore, the positive price also provides a market guide to the value of the program, pointing the market toward production that better satisfies consumer demands. This enhances efficiency. Because a public good is nonexcludable, public goods theorists argue that free riders will keep producers from profiting from the production of the public good. Yet, legal institutions arise to mitigate this problem and provide revenue to the producers, and the relative profitability of software manufacturers to hardware manufacturers shows that the free-rider problem has not materially hindered the industry.[14] When judging the efficiency of private production of public goods, it must be done relative to alternative real-world institutions, rather than relative to some abstract theoretical ideal such as Pareto optimality. The theoretical arguments show how market incentives lead toward the efficient production of public goods, and an examination of the software industry provides an example of how this works in the real world. Could anyone think that software would be cheaper or more productive if it were produced by the government rather than by private firms?

When considering the software example, doubters are quick to give reasons why software can be produced by private markets while other goods, like national defense must be produced by government. Any differences between software and national defense are irrelevant to the present discussion, however. The issue is not whether national defense, or any other specific good, can be produced by markets, but rather whether public goods, defined by economic theory as nonexcludable collective consumption goods, can be efficiently supplied by markets. Examples such as software and radio broadcasts show that they can. Thus, if government production of national defense (or any other good) is necessary for efficiency, it is not because those goods are public goods. Using the economist's definition, public goods can be and are supplied efficiently by markets. Theoretical arguments show why this can be so, and examples demonstrate that it actually happens.

[14]An interesting subject of inquiry, but beyond the scope of the present paper, is the institutional and legal structure within which the market provides incentives for the production of public goods. Neoclassical public goods theory is designed in a static equilibrium setting that ignores the institutional structure of exchange and the process by which contracts are written to encourage parties to engage in mutually-beneficial production and exchange.

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Public Goods and Market Production

The preceding sections have covered a substantial amount of ground, with the intention of making a limited point. The point is that from the standpoint of economic theory and by looking at real-world evidence, there is no reason to presume that government production is necessary to efficiently produce nonexcludable Samuelsonian public goods. From a theoretical perspective, market production of public goods provides the benefits of revealed preference for demands and incentives to satisfy consumer demand at low cost. Innovation is likely to be greater for private rather than public production, following the arguments of Hayek and Kirzner.[15] Further, private-sector production avoids the cost of the excess burden of taxation. Finally, there are well-known incentive problems that stand in the way of efficiency for any type of government production. Real-world evidence shows that nonexcludable Samuelsonian public goods, like radio broadcasts and microcomputer software, are efficiently produced in the market. Indeed, in locations such as Britain and Cuba, where the government produces radio broadcasts, there is a black market for private radio broadcasts, indicating that private provision can thrive even when subsidized public provision is already taking place.

Note the limited scope of this argument. It does not say that there is no reason for the government to produce certain goods, such as national defense or roads or education. It merely says that if there is a reason, it cannot be that these goods are nonexcludable Samuelsonian public goods. Both theoretical and practical evidence shows that the market can efficiently produce some nonexcludable Samuelsonian public goods, so publicness by itself cannot be the reason for government production. Private markets can produce public goods, both in theory and in reality.

Is Government Production a Public Good?

An examination of the expenditures of governments in the United States shows that the largest single category of government expenditure is redistribution. At the federal level, national defense is the second-largest category of government expenditure, while at the state and local level, education is the major expenditure category. Governments undertake an array of other expenditure programs, but because public goods theory has been put forward as a theory of public expenditure, it is reasonable to ask whether government output is a public good. In other words, can public goods theory be used to explain what the government actually does?

[15] Hayek, "The Use of Knowledge in Society"; and Kirzner, *Competition and Entrepreneurship*.

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The best claim that one could make that redistribution is a public good is that it may provide a nonexcludable benefit to those who give. The argument goes as follows. People want to be charitable because they want to see an improvement in the well-being of those who are disadvantaged. However, if one person gives to charity, another can free ride off this donation by allowing the contributions of others to improve the situation of the disadvantaged. Both the giver and the free rider receive the same benefit in terms of seeing an improvement in the well-being of the recipient.[16] The donation itself is a private good to the recipient, because a dollar given to one recipient is a dollar less available to another, but it may be a public good among potential donors. Thus, in order to provide the optimal amount of redistribution, the government forces people to contribute.

Empirical verification of this argument might be difficult, because taxpayers arguing that they did not want to contribute as much as they are to redistribution might be lying in order to try to become free riders. However, one must pause to consider the amount of redistribution that takes place in the United States to those who are relatively well-off. The poor outside the United States are so much worse off than those inside the United States that one must wonder what kind of a utility function these altruistic donors have that makes them so charitable to those within the nation's borders but so unsympathetic to those in other parts of the world (and sometimes just across the border). Furthermore, the bulk of redistribution efforts in the United States goes toward those who are not among the lowest in income, and sometimes are among the wealthiest members of the population.[17]

If the argument that redistribution is a nonexcludable good is tenuous, it should be apparent that redistribution is not a Samuelsonian public good. In Samuelson's framework, it is a pure private good. A dollar's worth of resources redistributed to one person reduces the amount of resources available to others by a dollar, so consumption is completely rivalrous. Public goods theory cannot explain redistribution, the largest economic activity of the contemporary public sector.

One might argue that government coerces taxpayers to contribute to redistribution programs because redistribution is a public good, but an alternate hypothesis is that government redistribution goes to those who have political power. This would explain why redistribution would go toward people in this

[16]This argument is expressed by Harold M. Hochman and James D. Rogers, "Pareto Optimal Redistribution," *American Economic Review* 59 (September 1969): 542–57.

[17]The largest redistribution program in the United States is Social Security, which redistributes regardless of need. The same is true of farm price supports and other programs. For a discussion of the idea that most redistribution comes from middle income people and goes to middle income people, see George J. Stigler, "Director's Law of Public Income Redistribution," *Journal of Law and Economics* 13, no. 1 (April 1970): 1–10.

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country when others outside the country, who are much worse off, get none, and would explain why much redistribution goes toward those who are not financially disadvantaged. Conventional wisdom, for example, suggests that politicians are reluctant to tamper with Social Security benefits because of the political power of elderly Americans. This conventional wisdom lines up with the political-power theory of redistribution, not the public goods theory.

The two other major products of government, national defense and education, are susceptible to the same types of questions. Most people unthinkingly associate defending a nation's borders with defending the individuals within those borders, but Hummel and Lavoie show the fallacy of this argument.[18] Once the distinction is pointed out, it becomes obvious that national defense protects the government's sovereignty, and only peripherally protects the individual citizens of the government. National defense and education are both considered at greater length below. Other public-sector output, such as roads and police protection, also have been claimed as public goods. While they will not be examined specifically in this paper, the private production of these goods has been analyzed by other authors who have shown the advantages of private-sector production.[19]

The concept of a public good is vague enough that many goods might in some sense be called public. However, the concept of Samuelsonian publicness has a precise mathematical definition that allows empirical measurement of Samuelsonian publicness. If a good is Samuelsonian public, the marginal cost of adding an additional consumer is zero, and this can be tested with data on the cost of public goods. Empirical studies on many goods confirm that government output empirically is a private good, not a public good.[20] Legislation—the cost of passing laws—would seem to be about as public as any governmentally-produced good, because laws passed for one person can costlessly cover others, yet when subjected to an empirical test of Samuelsonian publicness, even legislation turns out to be primarily a Samuelsonian private good.[21] One might debate about what

[18]Jeffrey Rogers Hummel and Don Lavoie, "National Defense and the Public Goods Problem," *Journal des Economistes et des Etudes Humaines* 5, nos. 2/3 (June/September 1994): 353–77.

[19]Murray N. Rothbard, *For a New Liberty* (New York: Macmillan, 1973) gives a good explanation of how the private sector is a superior alternative to government in all cases, and defends the idea of an orderly anarchy. Bruce L. Benson, *The Enterprise of Law: Justice Without the State* (San Francisco: Pacific Institute, 1990) gives a detailed discussion of the evolution of private law, showing its advantages over public-sector legal systems.

[20]A discussion of the literature, with empirical tests for many local public goods, appears in R.A. Gonzalez, T.S. Means, and S.L. Mehay, "Empirical Tests of the Samuelsonian Publicness Parameter: Has the Right Hypothesis Been Tested?" *Public Choice* 77, no. 3 (November 1993): 523–34.

[21]See Randall G. Holcombe and Russell S. Sobel, "Empirical Evidence on the Publicness of State Legislative Activities," *Public Choice* 83, nos. 1/2 (April 1995): 47–58 for empirical evidence.

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one means by the term public good, but if one takes the precise Samuelsonian definition, empirical evidence shows that the government produces private goods, not public goods.

A Positive Model of Government

The theory of public goods is on shaky ground if it is to be used either to explain or justify public-sector production. The previous two sections have shown that, first, both theoretical and empirical evidence show that the private sector can produce public goods efficiently, and second, that most of what the government produces is not a public good anyway. Note the limited nature of this claim. The argument says nothing about whether it is efficient to produce certain goods in the public sector, but only demonstrates that public goods theory fails on both theoretical and empirical grounds as an explanation for what goods are produced, or should be produced, in the public sector. How can public-sector activity be explained from an economic standpoint? This section describes a positive model of government to use as a foundation for understanding the government's role in the production of goods, services, and transfers. A more complete description of the model outlined here is found in Holcombe, *The Economic Foundations of Government*.[22]

Recent interest in the contractarian model of government has promoted the idea that governmental institutions can be designed for the mutual benefit of all citizens, reinforcing the public goods view of public production.[23] These models stand on an economic foundation in the sense that governmental institutions are developed as a result of mutually-beneficial exchange and gains from trade, but have been criticized because the contractarian model is based on agreement as the foundation for government.[24] As a matter of fact, governments historically have been imposed on some individuals by others, and continue to hold their power by force, not agreement. No matter how much a person might actually agree with the goals and purposes of government, ultimately the government uses the threat of force to create compliance with government rules.[25]

[22]Randall G. Holcombe, *The Economic Foundations of Government* (New York: New York University Press, 1994).

[23]See John Rawls, *A Theory of Justice* (Cambridge, Mass.: Belknap, 1971); Robert Nozick, *Anarchy, State, and Utopia* (New York: Basic Books, 1974); and James M. Buchanan, *The Limits of Liberty: Between Anarchy and Leviathan* (Chicago: University of Chicago Press, 1975) for examples. Scott Gordon, "The New Contractarians," *Journal of Political Economy* 84, no. 3 (June 1976): 573–90, has referred to these three individuals as the new contractarians.

[24]See Leland B. Yeager, "Rights, Contract, and Utility in Policy Espousal," *Cato Journal* 5, no. 1 (Summer 1985): 259–94.

[25]The government will be better off the less force it has to use, so it has an incentive to entice people to cooperate. This issue is discussed below.

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Consider Buchanan's model of a social contract being negotiated from the hypothetical starting point of anarchy.[26] In Buchanan's model, all must agree that they are better off with than without the social contract, which constitutes a conceptual agreement with the contract. In fact, in a Hobbesian anarchy, nobody would be very well-off. The weakest would be subject to predation by the strong, but even the strong would find little to take from the weak, because the weak would have little incentive to produce if they had no way to retain any benefits from their production. In this situation, a Pareto-superior move could be made in which the strong make a believable promise to the weak that if the weak just give them a fixed percent of their income—say 30 percent—the strong, in exchange, promise not to take anything more from them.

Such a promise makes both the weak and the strong better off because the weak now get to keep 70 percent of what they produce rather than having everything taken from them, while the strong get everything they produce plus 30 percent of what the weak produce. While this outcome would likely fail the Rawls "veil of ignorance" test,[27] it more realistically depicts the way that, throughout history, some people have conquered others in order to enhance the wealth of the conquerors. Prior to the agricultural revolution, bandits preyed on groups of individuals, but the advent of agriculture tied individuals to fixed locations. It then became more efficient for those bandits also to tie themselves to fixed locations in order to continue preying on those who were producing, and also to try to prevent competing bandits from taking their wealth while the original bandits were elsewhere. The strong become the government, while the weak become the government's citizens and pay them tribute.

The citizens of this government are the source of the government's wealth, but the existence of a government creates an opportunity for other powerful individuals to overthrow the government to capture that wealth. Thus, the government has an incentive to protect its citizens, because it is protecting its own source of income. Citizens of the government pay their taxes, and in exchange the government protects them because the citizens produce the government's income. There is a natural exchange of protection for tribute, which is the fundamental exchange relationship that binds a government with its

[26]Buchanan, *The Limits of Liberty*.

[27]Rawls, *A Theory of Justice*. Here he argues that institutions should be agreed upon from behind a "veil of ignorance." From behind the veil, nobody would know what their identity would be after the veil is lifted. Thus, from behind the veil, everybody would have an equal probability of being any member of society after social institutions were designed. If one did not know whether they would be in the strong or weak group, it is unlikely that they would agree to give more to those who happened to be in the strong group after the veil was lifted.

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citizens. The citizens benefit because they receive protection, and they have an incentive to comply because the government threatens to use force against those who do not comply. The government benefits because it receives its revenue from the citizens, and it has an incentive to provide them protection because it is protecting its own source of income.

This model explains the government's activities as a function of the private interests of those who run the government. In this model, the government has an incentive to constitutionally constrain its taxing power, because by guaranteeing its citizens that they profit from their productivity, citizens will be more productive, and there will be more for the government to take. Constitutional constraints benefit the government, in contrast to the contractarian paradigm where constitutional constraints are imposed on the government by citizens who want to constrain government power. The government has an incentive to protect the rights of its citizens to ensure their productivity. The government then has an incentive to engage in other forms of public-sector production because it can assign itself a monopoly and receive monopoly profits, further enhancing the profitability of governing.

Democratic election of government leaders, with strong advantages to incumbents, also makes sense as a way of maximizing government profit. By allowing elections, government leaders channel the resources of potential challengers into elections rather than into violent overthrow. People who want to take over dictatorships must do so by force, creating a threat to dictators, and requiring that resources be devoted toward protecting the government from revolutions. Democracies can save those resources, which makes governing potentially more profitable as well as less physically threatening.[28] Introspection helps reinforce this idea that democracy is desirable for political leaders. Which would you rather be, a democratically-elected political leader, or a dictator who holds on to the position by threat of force?

Holcombe develops this model of government in further detail, but this overview is sufficient for the development of a theory of the theory of public goods.[29] The point is that economic theory suggests that people are likely to act in ways that further their own interests rather than the general public's interest. The public goods theory of public expenditure suggests that the government acts

[28]Leaders of democratic governments also must find some comfort in the thoughts that if they are unseated, they can return to the private economy with enhanced profit opportunities, as opposed to living in exile, or worse. For a discussion of the merits of democratic government in this context, see Dan Usher, *The Welfare Economics of Markets, Voting, and Predation* (Ann Arbor: University of Michigan Press, 1992).

[29]Holcombe, *The Economic Foundations of Government*.

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in the public interest, but an alternative view is that government activities are undertaken for the best interests of those who govern. Fortunately, because the income of the government comes from the productivity of its citizens, there is often considerable overlap, so that what is in the interest of government's citizens is also often in the best interest of those who govern, but from an economic standpoint, it is still more satisfying to explain the government's activities in terms of the interests of those who make public-sector decisions, rather than in terms of the public interest.

National Defense

The prime example of a public good in traditional public finance theory is national defense, and the model of government just described presents an alternative to the public-goods explanation for government provision of national defense. As already noted, the market can produce public goods efficiently, both in theory and in practice, so even if national defense is a public good, the market that produces public goods like television broadcasts and microcomputer software could also produce other public goods. Perhaps there are other good reasons why the market could not produce national defense, but the earlier analysis of public goods theory, buttressed by real-world examples, should dispel the myth that public goods have to be produced in the public sector. In short, public goods theory cannot explain why the government produces national defense.

The exchange model of government described in the previous section explains the production of national defense as a result of the self-interest of those in government. The government gets its income from its citizens, so it has an incentive to protect its source of income. Government-income maximization as a motive for national defense also has the advantage that it clearly explains why nations engage in all kinds of military activities around the world when the nation's citizens are in no danger from foreign invasion. Why did the U.S. government invade Kuwait in 1991? The invasion of Kuwait by Iraq posed little threat to U.S. national security, but did pose a threat to U.S. income. The exchange model of government has the further advantage that it does not rely on the public spiritedness of those in government to produce benefits for its citizens. Rather, it shows the production of national defense as an activity that benefits those in government directly by protecting their source of income.

On many grounds, the theory that national defense is a product of the exchange of protection for tribute is more persuasive than the theory that government produces national defense because it is a public good. The government produces national defense because it protects the government's taxpayers, so protects the government's source of income, and benefits those who earn

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their incomes in government. This explains the government production of national defense, but is only a start toward describing a theory of the theory of public goods.

Legitimacy as an Asset of the State

If government does produce national defense in order to protect its source of income, it will want to protect its income at the lowest cost possible. When considering national defense, this means protecting its income from foreign aggressors, but governments find threats at home as well as abroad. The government will also want to minimize the costs it incurs in gaining compliance of its own citizens with its policies. Through the use of intimidation and force, governments can get citizens to comply with its desires. Tax evaders face tax court and jail, for example, and may have to play IRS benefit concerts, like Willie Nelson, to pay back taxes.[30] The government can save resources, however, if it can get citizens to want to voluntarily comply with its policies. In order for citizens to want to help the government, government action must appear to its citizens to be legitimate.

Democratic government itself is a mechanism for producing legitimacy because if people vote for their leaders, then their leaders have the legitimate role of acting as representatives of the citizens. Citizens may not agree with their representatives' actions, but they are inclined to agree that the representatives have the right to act for them because they were elected through generally agreed-upon electoral institutions. Similarly, constitutional constraints that specify the role of government, along with government apparatus such as courts, a division of powers, and a well-defined procedure for undertaking government action all add to the perception of legitimacy on the part of government leaders. The more legitimate the government appears, the easier it is to get citizens to comply. Thus, political institutions have symbolic value in addition to their purely practical value as a collective decision-making mechanism.[31]

Public Education and the Legitimacy of Government

Government benefits if it is perceived as a legitimate institution because it is then less costly for those in government to persuade the government's citizens to

[30]In addition to helping Mr. Nelson pay the taxes the IRS claimed he owed, the concerts Mr. Nelson played also served to demonstrate in a very visible way that the IRS is serious about enforcing its claims.

[31]For a discussion of the symbolic uses of politics and the way that politics conveys the perception of legitimacy on government actions, see Murray Edelman, *The Symbolic Uses of Politics* (Urbana: University of Illinois Press, 1964). See also Douglass C. North, *Structure and Change in Economic History* (New York: W. W. Norton, 1991); and idem, "Ideology and Political/Economic Institutions," *Cato Journal* 8 (Spring/Summer 1988): 15–28.

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comply with its mandates. Thus, the government has the incentive to create the impression among its citizens that its actions are legitimate. It can do so by creating institutions that give the impression of adherence to generally agreed-upon rules, and by creating democratic processes that foster the image of consensus in collective decision-making.[32] Government can further reinforce its image of legitimacy by creating propaganda that brainwashes citizens to respect government institutions and processes.

As a simple example, the right to vote allows democratic selection of leaders, which brings about many advantages. Among those advantages is that it conveys legitimacy to the decisions that representatives make because, supposedly, those decisions are representative of the representatives' constituents. Thus, the government has an incentive to encourage voter turnout in order to foster the image that political leaders are chosen by the people, and has an incentive to instill patriotic feelings about the fairness and representativeness of the process by which leaders are chosen. This makes the government appear more legitimate, and makes it less costly for government to get its citizens to comply with its wishes.

In contrast, the ideas that one voter's vote makes no difference because it will not change the outcome of an election, that voters are therefore rationally ignorant of most political issues, and that the political decision-making process is dominated by special interests rather than representative of the general public interest reduces the appearance of legitimacy, and can make it more costly for government to create compliance with its policies. For this reason, Kelman argues against public-choice theory, reasoning that teaching it erodes public spiritedness because it makes the government appear less legitimate.[33]

If the perception of legitimacy is important to a government, and if that perception can be influenced by controlling the flow of ideas to the government's citizens, then the government has an incentive to take control of the institutions that influence the ideas of its citizenry. One has no trouble understanding why dictatorships demand government control of the mass media, or why freedom of the press is viewed as a fundamental check on government's power. However, such heavy-handed controls make it obvious to citizens that they cannot trust the information they receive. Governments can still control the flow of ideas without controlling the mass media, if they can control the education system. The education system exposes students to

[32]Governments need not be democratic in order to create the impression of legitimacy. If citizens believe that their rulers are appointed by the gods, or are themselves gods, such as the Pharaohs in ancient Egypt, or if citizens believe that hereditary monarchy is a legitimate way of determining political leadership, then the actions of leaders can carry with them the perception of legitimacy.

[33]Steven Kelman, "'Public Choice' and Public Spirit," *Public Interest* 87 (Spring 1987): 80–94.

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ideas, sets up a system of rewards and punishments to encourage students to retain ideas approved by the system, and when the university education system is included, also undertakes research to develop new and improved ideas.

Even in centrally-planned economies that control the mass media, family and friends provide a network through which individuals can receive information and ideas, which then can be evaluated on their merits. This is a difficult network to control. The education system has an advantage over these other methods of information dissemination, however, because it provides an incentive for the student to retain the information approved of by the system. Successful students are those who are best able to arrive at institutionally-approved answers.

The challenge to the state is to make institutionally-approved answers state-approved answers, and the best way to accomplish this is to take over educational institutions and make them state-run enterprises. By nationalizing the education industry and making teachers state employees, teachers naturally have the incentive to side in favor of the state whenever there is a question. Teachers become tools of state propaganda, and often explicitly so. It is not uncommon to argue that one of the main goals of public education is socialization, and that schools should make students into good citizens. The perception of legitimacy of the government is thus enhanced through public education.

The tenure system is an integral part of the nationalization of education. Without tenure, teachers could lose their jobs and end up back in the private sector. Thus, teachers would have more of an incentive to examine the relative merits of the public versus private sectors. Tenure guarantees teachers a government job for life, reinforcing their pro-government sentiments. Support of tenure as a method of preserving academic freedom may have some merit for college professors, but this does not explain why librarians receive tenure, or why elementary school teachers receive tenure. Indeed, while tenure is the norm in both public and private universities, in elementary and secondary education the norm is that public school teachers have tenure while private school teachers do not. Teachers with guaranteed lifetime government jobs are more likely to be sympathetic to government propaganda, and thus help reinforce ideas about the legitimacy of government action.

State financing of institutions of higher education includes a substantial research component. The relationship between research in the sciences and government interests is obvious enough that it needs no lengthy discussion, because university science research and defense technology are so closely related (and often controversial for that reason). But why would the state benefit from subsidizing research in history, languages, or social sciences? These disciplines develop ideas which can enhance the appearance of the legitimacy of the state, or detract from it. Ideally, from the perspective of the state, research in social sciences and related areas

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would bolster the appearance of legitimacy, making it less costly for the government to gain compliance of its citizens. By making researchers government employees, the researchers have an incentive to push the agenda of the state.

The state could force researchers to produce research that only supports the state's positions on issues, but the state is much better off if researchers voluntarily want to enhance the legitimacy of the state in their research. The state benefits because, first, it is cheaper to get researchers to go along if they want to go along, and second, the resulting research will have more credibility if it is not forced, further enhancing the legitimacy of the state. Thus, public educational institutions benefit the government by teaching concepts that enhance the legitimacy of the state, and by undertaking research that furthers the appearance of legitimacy. Public employees have the incentive to promote ideas that enhance the appearance of legitimacy of the state, but they are not forced to do so.

One justification traditionally given in the economics literature for government production of education is that there are spillover benefits from education. We all benefit from living in a more educated society, so individuals have an incentive to underconsume education. The remedy is public education. Note that if the problem were really just that individuals have insufficient incentive to obtain education, a subsidy would internalize the externality, and public schools would be unnecessary. Indeed, private schools are often criticized despite their superior ability to produce academic achievement, because private schools do not socialize students as well as public schools. While individuals do have the freedom to choose private schools, they are not subsidized to the extent that public schools are, so one must conclude that the government's interest is in public production rather than just encouraging more educational activity.[34]

The view that government produces public education to disseminate propaganda to enhance its appearance of legitimacy, and thus to lower the cost of citizen compliance, is more compelling than the traditional argument that the government is internalizing an externality on two grounds. First, it is consistent with the differential treatment of private schools. Second, it shows that the state has the economic incentive to produce education. Public education is not produced because the government wants to do good things for its citizens; rather, it is produced because government wants to control their ideas to enhance its power.

[34]Private schools do receive some state benefits. Scholarships, research grants, and so forth are obvious examples. They also may take advantage of non-profit status to avoid taxation. Increased subsidization of private schools might indicate a more democratic society in which interest groups wanting to have private education are able to weigh in with their political demands. A contrary viewpoint is that state subsidies go hand-in-hand with state control, and that the government would benefit from a takeover of private schools, facilitated by subsidization.

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Public Goods and the Perceived Legitimacy of Government

Having described a model of government and explained the rationale for public education within that model, a theory of the theory of public goods is now relatively straightforward. The theory of public goods is a product of academicians working within the state-subsidized higher-education system. Public goods theory justifies government production on the grounds that the citizens of a government benefit from that production. Individuals who believe this theory are more inclined to view government activity as furthering the well-being of the government's citizens, and thus are more inclined to view such government activity as legitimate. The theory of public goods furthers the government's own interests, and educators, as a part of the state-controlled education system, have an incentive to promote the theory in order to support the state that supports them.

While an overwhelming majority of educators work at government institutions, a minority are employed by private schools. The government has so thoroughly taken over the education industry that those in private institutions have an incentive to adopt the same views as their government-employed colleagues. For one thing, private institutions depend on the government for research funding, student loans, as well as scholarships, and for tax laws that favor private donations to the institutions. Second, there is much movement back and forth from public to private institutions as faculty change jobs, blurring the distinction. Third, academic disciplines rely on a consensus to determine what ideas have merit for publication in scholarly journals, for student textbooks, and even for professional acceptability. Thus, by directly running the vast majority of institutions of higher learning, and by controlling others through grants, scholarships, and other financial means, the government has bought control of the production of ideas, including the theory of public goods.[35] Scholars have an incentive to accept the ideas of the mainstream of their profession or risk a loss of academic stature.[36]

Public goods theory is a product of a state-dominated higher-education system, and is used to bolster the perception of legitimacy of government action. The principles of economics suggest that people tend to act in order to further

[35]Despite working at a private institution, Samuelson, as the foremost promoter of the theory of public goods, has had great faith over the years in the government's ability to allocate resources efficiently. In the 1973 edition of his popular introductory textbook *Economics* (9th ed. published by McGraw-Hill), published in the year of Ludwig von Mises's death, Samuelson forecast that despite the fact that the Soviet Union had a *per capita* income about half that of the United States, the Soviet Union was growing faster and could catch up with the U.S. as soon as 1990, and almost surely by 2010 (p. 883). His promotion of government production of public goods on efficiency grounds fits well with his more general ideas on the efficiency of government production.

[36]Ludwig von Mises provides a good example of this. Because he steadfastly held to his idea that socialism is not a viable economic system, his work was not taken seriously by the majority of his profession until socialism collapsed, 20 years after his death.

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their own self-interests, and the model presented in this paper has shown how self-interested behavior can explain the existence of government, and can explain why government produces public goods such as national defense and education. Public goods theory, in contrast, explains the government production of public goods as a result of a benevolent government acting in its citizens' interests, to maximize social welfare. Based on simple economic criteria, a theory of government action based on altruistic behavior should not hold up as well as one based on self-interest. Yet, academic economists accept and promote public goods theory because, despite its anti-economic foundation as a positive theory of government action, its acceptance helps support the public sector that in turn supports academic economists.

Conclusion

Public goods theory is both inadequate and inappropriate as an explanation of public expenditure. The activities undertaken in the public sector cannot be understood using the theory of public goods, following either of two lines of reasoning. First, there is no reason to believe that public goods can be produced more efficiently in the public sector than in the private sector. On theoretical grounds, there are many reasons why private-sector production of public goods has efficiency advantages over public-sector production, including the ability to reveal consumer preferences for the good, the elimination of the excess burden of taxation, and the existence of a profit motive for private sector producers. Empirically, we observe many public goods that are successfully produced in the private sector, ranging from television and radio broadcasts to microcomputer software. Therefore, identifying a good as a public good is not sufficient to argue that efficiency considerations require public-sector production. Second, using the formal economic definition of publicness, government output is not a public good anyway. Empirical studies of public sector output show that when the rigorous definition of Samuelsonian publicness is used to characterize public-sector output, public-sector production does not have the characteristic of jointness in consumption that was identified in theory by Samuelson. Because empirical evidence shows that government output fails the test of publicness as economists define the term, public goods theory cannot be used as a basis for explaining or justifying public expenditures. Yet, the theory of public goods persists as a justification for government production.

The persistence of the theory of public goods makes sense if the theory of public goods is considered as a tool of the government to justify the legitimacy of its activities and make it less costly to get citizens to comply with its wishes. The theory is promulgated by the state-supported education system, giving

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educators, as employees of this state-supported industry, an incentive to promote the theory of public goods. This all-purpose justification for government activity serves the government well by arguing that its activities are legitimate means of enhancing social welfare, in order to create ideological support for the public sector. The theory of public goods does not do a very good job of explaining what the government actually does, or should do, but can be better understood as a tool that the government employs for its own benefit.

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Knowledge, Judgment, and the Use of Property

Jörg Guido Hülsmann

Two Interpretations of the Causes of the Socialist Disaster

In recent years, the socialist calculation debate of the 1920s and 1930s has attracted anew the interest of thinkers in the Austrian tradition. With the breakdown of the Soviet empire Ludwig von Mises's claim that socialism as an economic system is impossible has received a somewhat late empirical confirmation. However, modern Austrian economists are far from sharing a common interpretation of the issue.

Some of them think that the impossibility of socialism stems from its inability to communicate dispersed knowledge.[1] In their eyes, information about the particular circumstances of time and place can never be centralized. It necessarily exists in dispersed form and yet it can be communicated by the market prices of capitalist societies. Only capitalism is thus capable of solving the knowledge problem.

Other authors consider the knowledge-problem to be secondary.[2] They hold that the absence or presence of private property is the salient point. In socialism

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[1] Cf., for example, Peter J. Boettke, *The Political Economy of Soviet Socialism* (Boston: Kluwer, 1990), pp. 23ff; Gerald P.O'Driscoll, *Economics as a Coordination Problem* (Lawrence: University of Kansas Press, 1977), pp.16ff; Richard M. Ebeling, "Economic Calculation Under Socialism: Ludwig von Mises and His Predecessors," in *The Meaning of Ludwig von Mises*, Jeffrey M. Herbener, ed. (Auburn, Ala.: Ludwig von Mises Institute, 1993), pp. 56ff; Jesús Huerta de Soto, "Entrepreneurship and the Economic Analysis of Socialism," in *New Perspectives on Austrian Economics*, Gerrit Meijer, ed. (London: Routledge, 1995), pp. 228ff; Israel M. Kirzner, *The Meaning of Market Process* (London: Routledge, 1992), pp. 51f, 100f; Don Lavoie, *Rivalry and Central Planning: The Socialist Calculation Debate Reconsidered* (New York: Cambridge University Press, 1985); Karen Vaughn, "Economic Calculation Under Socialism: The Austrian Contribution," *Economic Inquiry* 18 (1980); Leland B. Yeager, "Mises and Hayek on Calculation and Knowledge," *Review of Austrian Economics* 7, no. 2 (1994): 93–109.

[2] Cf., for example, Jeffrey M. Herbener, "Ludwig von Mises and the Austrian School of Economics," *Review of Austrian Economics* 5, no. 2 (1991): 33–50; idem, "Economic Calculation and the Question of Arithmetic," *Review of Austrian Economics* 9, no. 1 (1996); Hans-Hermann Hoppe, *A Theory*

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there can be no calculation because the latter presupposes market prices. Market prices, however, presuppose exchange and, thus, private property.

This division of opinions goes back to Mises and Hayek. Mises considered the emphasis on the knowledge problem to be insufficient because it merely suggested a *practical difficulty* for the implementation of a socialist regime. What he had in mind was that socialism was, for purely logical reasons, *impossible*.[3] Hayek, on the other hand, focused entirely on the problem of dispersed knowledge.[4] He not only developed this point in the context of the socialist calculation debate but it is the foundation of all of his later social philosophy.

Importance of the Dispute

We are not merely discussing the reasons for the failure of socialism, because the dispute concerns both the understanding of what economics is all about and the practical conclusions that can be inferred from our science. The whole issue is of fundamental importance.

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of Socialism and Capitalism (Boston: Kluwer, 1989); idem, "Socialism: A Property or Knowledge Problem?" *Review of Austrian Economics* 9, no. 1 (1996): 143–49; Murray N. Rothbard, "Ludwig von Mises and Economic Calculation Under Socialism," in *The Economics of Ludwig von Mises*, Lawrence Moss, ed. (Kansas City: Sheed and Ward, 1976); idem, *Man, Economy, and State*, 3rd. ed. (Auburn, Ala.: Ludwig von Mises Institute, 1993), esp. pp. 542ff, 825ff, 830ff; Joseph T. Salerno, "Ludwig von Mises as Social Rationalist," *Review of Austrian Economics* 4 (1990): 25–54; idem, "Mises and Hayek Dehomogenized," *Review of Austrian Economics* 6, no. 2 (1993): 113–46; idem, "Reply to Leland B. Yeager," *Review of Austrian Economics* 7, no. 2 (1994): 111–25.

[3]Commenting on Hayek's article "The Present State of the Debate" (in *Collectivist Economic Planning*, F. A. Hayek, ed. [London: Routledge, 1935], p. 211), Mises says: "Hayek has shown that the use of equilibrium for economic calculation presupposes knowledge of the future valuations of the consumers. However, he has seen in this merely a problem of the practical application of the equations, not a fundamental and unsurmountable obstacle for their practical use." I am indebted to Dan Cristian Comanescu for bringing this passage to my attention. Consider also the following statement from Mises: "We do not deal with the problem of whether or not the director will be able to anticipate future conditions. What we have in mind is that the director cannot calculate from the point of view of his own present value judgments and his own present anticipation of future conditions, whatever they may be." Ludwig von Mises, *Human Action*, 3rd ed. (Chicago: Regnery, 1966), p. 700, my emphasis. Here Mises stresses the role of calculation, that is, of a method of thought. He explicitly denies the importance of knowledge for the issue under consideration.

[4]Hayek says: "The peculiar character of the problem of a rational economic order is determined precisely by the fact that the knowledge of the circumstances of which we must make use never exists in concentrated or integrated form but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess." F.A. Hayek, "The Use of Knowledge in Society," in idem, *Individualism and Economic Order* (Chicago: University of Chicago Press, 1948), p. 77. Moreover, Hayek explicitly contended that economic calculation would be possible without private property: "It is the great contribution of the Pure Logic of Choice that it has demonstrated conclusively that even such a single mind could solve this kind of problem only by constructing and constantly using rates of equivalence (or "values" or "marginal rates of substitution"), that is, by attaching to each kind of resource a numerical index which cannot be derived from any property possessed by that particular thing, but which reflects, or in which is condensed, its significance in view of the whole means-end structure." Ibid., p. 85).

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According to Mises, economics is a science that consists of *a priori* propositions about reality. In his eyes these propositions are implied in the conditions of action and are arrived at by an exercise of logic. Whatever is the product of sound discursive reasoning, so the argument goes, must be valid for reality.

This is precisely the point that Hayek wants to oppose. To his understanding, economic theorems are in some way detached from reality. They are mere tautologies. Additional statements about the acquisition of knowledge are necessary to make them relevant for the understanding of our world. Thus, consider the programmatical declaration that he gave in his article on "Economics and Knowledge":

> my main contention will be that the tautologies, of which formal equilibrium analysis in economics essentially consists, can be turned into propositions which tell us anything about causation in the real world only in so far as we are able to fill those formal propositions with definite statements about how knowledge is acquired and communicated. In short, I shall contend that the empirical element in economic theory—the only part which is concerned not merely with implications but with causes and effects and which leads therefore to conclusions which, at any rate in principle, are capable of verification—consists of propositions about the acquisition of knowledge.[5]

Formal equilibrium analysis in the sense Hayek uses refers to the mathematical approach. However, it is at least doubtful whether one really has to condemn equilibrium analysis altogether in order to refute socialism. This is an issue beyond our present scope. Rather the focus is on a critique of the Hayekian emphasis on knowledge problems and on a reconstruction of the fashionable expressions of market process and knowledge in terms of property and calculation. The Hayekian approach has been elaborated with delicacy by Israel M. Kirzner. Therefore, the present critique will refer mainly to his works.[6] The whole knowledge paradigm is a blind alley and its infallibility leads to nihilism of the Shacklean–Lachmannian brand.

The Case Against the Knowledge Paradigm in Economics

Do Prices Communicate Knowledge or Coordinate Actions?

The first thing we have to ask is whether prices do have a communicative function at all. According to Kirzner, there are two quite different communicative functions of prices. He distinguishes between the communicative functions

[5]Ibid., p. 33.

[6]For a statement of some of my criticisms, see Jörg Guido Hülsmann, *Logik der Währungskonkurrenz* (Essen: Management Academie Verlag, 1996), pp. 13ff, 122ff.

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of equilibrium and disequilibrium prices, and places particular emphasis on the latter:

> It is one thing to recognize the role of equilibrium prices as economic signals which permit instantaneous coordination of decentralized decisions, based on dispersed bodies of knowledge. It is quite another thing to recognize the role of *dis*equilibrium prices in stimulating entrepreneurial discoveries concerning the availability of dispersed information (whose existence had hitherto escaped relevant attention).[7]

Let us consider these functions in turn. This first thesis refers to equilibrium prices. It is, indeed, composed of three distinct sub-theses.

First off, prices are claimed to contain economic information in a condensed form.[8] This is undoubtedly true if one intends to say that prices give information about exchange ratios of the past. Yet, we have to remark that past prices are the outcome of past conditions. Action, however, is never confronted with past but with future conditions, namely, with all conditions prevailing during its course. Moreover, and this is the crucial point, we should not overlook that prices are always the *outcome* of an action. Therefore, all information that this action was based upon had to be acquired beforehand. The price itself could not have communicated the knowledge that brought it about. Only in a metaphorical sense could one say that prices reflect or contain information on present conditions. For acting man these conditions of the immediate past are already bygones.

The second sub-thesis says that equilibrium prices permit the communication of dispersed bodies of knowledge.[9] These particular circumstances of time and place are never known by anyone in their totality. Yet, through the exchange ratios of the market, they are transmitted in abridged form to all market participants. According to these advocates, socialism suffers because it has no equivalent mechanism. The socialist planning board cannot determine the values of the factors of production because these values are determined by facts of supply and demand that are too widely dispersed.[10]

[7]Kirzner, *The Meaning of Market Process*, p. 117. For a forerunner of Kirzner see Otto Conrad, *Der Mechanismus der Verkehrswirtschaft* (Jena, 1931), pp. 36ff. Conrad advocated what he called a "road sign" theory of prices. The first instance of an equilibration process is probably Spencer's law of adaptation. According to this law, "the ultimate development of the ideal man is logically certain." *Social Statics*, 1st ed. (reprint; New York: Robert Schalkenbach Foundation, 1970), p. 55–57. The driving force in the adaptation process is man's moral sense (see ibid., pp. 83ff).

[8]See Kirzner, *The Meaning of Market Process*, p. 151; and idem, *Competition and Entrepreneurship* (Chicago: University of Chicago Press, 1973), p. 10.

[9]See also Kirzner, *The Meaning of Market Process*, pp. 139ff; and idem, *Competition and Entrepreneurship*, p. 228.

[10]Hayek, *Individualism and Economic Order*, pp. 90f: "Only to a mind to which all these facts were

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Let us observe that the positive part of this reasoning contains no argument at all. It is asserted that prices communicate abridged relevant information. This, however, is only a metaphorical expression. Each exchange ratio is determined by particular circumstances of time and place. Yet, it is not important *that* this be so but rather—if at all—*how precisely* this determination operates. As long as there exists no theory about the exact determination of our choices, we can infer nothing from the fact that everything must be determined. It is also mere assertion that no mechanism other than prices could communicate those dispersed facts with the same speed.[11] However, if we assume, for the sake of the argument, that this was the case, then the market economy would stumble from one crisis into another. The quickest information for the capitalist-entrepreneurs is in the observation of market prices. Only then would they begin to act. In other words, if information really were so important, there would be no use for anticipating the future, yet it is precisely the latter that permits the market to operate smoothly.

Finally, the advocates of the importance of knowledge problems argue that exchange ratios permit the coordination of decentralized decisions. It is difficult to see how coordination as such could ever be a problem that socialism is incapable of solving. Indeed, in a larger sense all actions are somehow coordinated. Our actions are no less coordinated with the actions of milkmen and movie tycoons than with those of robbers, rapists, and murderers. It is not the problem of murder that the Hayekian knowledge theorists have in mind when they speak of coordination, so an additional criterion is required to distinguish "good" from "bad" coordination. This criterion—and not coordination—would then be the cornerstone of economic analysis.[12]

Thus, one is led to wonder whether the word "coordination" is but an unfortunate expression that obscures some valuable insights. We should therefore take a closer look at the illustrations given in support of the knowledge-problem approach. Probably most famous is the tin example that Hayek uses to illustrate the claim that "prices can act to coordinate the separate actions of

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simultaneously known would the answer necessarily follow from the facts given to it. The practical problem, however, arises precisely because these facts are never so given to a single mind, and because, in consequence, it is necessary that in the solution of the problem knowledge should be used that is dispersed among many people."

[11] "We cannot expect that this problem will be solved by first communicating all this knowledge to a central board which, after integrating all knowledge, issues its orders." Ibid., p. 84. On this point and its implications see in particular Hoppe, "Socialism: A Property or Knowledge Problem?"

[12] For a critique of coordination as a relevant criterion for economic theory, see also Stephen Shmanske, "On the Relevance of Policy to Kirznerian Entrepreneurship," *Advances in Austrian Economics* 1 (1994): 204ff.

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different people in the same way as subjective values help the individual to coordinate the parts of his plan." Hayek suggests that we:

> Assume that somewhere in the world a new opportunity for the use of some raw material, say, tin, has arisen, or that one of the sources of supply of tin has been eliminated. It does not matter for our purpose—and it is significant that it does not matter—which of these two causes had made tin more scarce. All that the users of tin need to know is that some of the tin they used to consume is now more profitably employed elsewhere and that, in consequence, they must economize tin. There is no need for the great majority of them even to know where the most urgent need has arisen, or in favor of what other needs they ought to husband the supply. If only some of them know directly of the new demand, and switch resources over to it, and if the people who are aware of the new gap thus created in turn fill it from still other sources, the effect will rapidly spread throughout the whole economic system and influence not only all the uses of tin but also those of its substitutes and the substitutes of these substitutes, the supply of all things made of tin, and their substitutes, and so on; . . . The whole acts as one market, not because any of its members survey the whole field, but because their limited individual fields of vision sufficiently overlap so that through many intermediaries the relevant information is communicated to all.[13]

There can be no doubt that the effect of the increased scarcity of tin will rapidly spread throughout the whole economic system and influence not only all the uses of tin but also those of its substitutes, etc. This process is, however, not best characterized by a coordinative function of prices.

The fundamental fact of scarcity implies that not every demand for tin can be satisfied. Some people have tin whereas others do not. An increased scarcity of tin implies that some market participants who otherwise could have benefited from tin are now of necessity prevented from using it. If a quantity of tin is sold, then the seller cannot sell it again, *regardless of the exchange rate*. There is simply no more of this tin left. Whether the seller takes notice of this or not is immaterial. He cannot sell what is no longer in his possession. Moreover, tin does not become scarcer and *then* this fact can come to be known to someone and lead to adaptations. Rather it is the other way around. The very fact that demand increases means that someone *already knows* of a more value-productive employment of tin.

It is not prices that coordinate the actions of sellers and buyers of tin; prices are the outcome of (coordinated) action, not its coordinators. It is property,

[13]Ibid., pp. 85f.

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rather than knowledge, that coordinates the separate actions of different people. The terms coordination and communication rather obfuscate than adequately express this fact. This is another example of the dangers linked to the use of metaphors in scientific discourse.

The Attraction Theory of Equilibration

Now, let us return to the second of Kirzner's theses. How far is it justified to speak of a communicative function of disequilibrium prices? Previously, we have seen that Kirzner believes them to stimulate entrepreneurial discoveries concerning the availability of dispersed information. The important word in this expression is "stimulate." Does Kirzner intend to say that prices or price spreads are the *causes* of actions? Indeed, this seems to be the position that he advocates. He says: "opportunities for profit can attract and inspire market actions which turn out to reduce market ignorance and misallocation."[14]

It is important to realize that this conception does not coincide with entrepreneurial alertness in the definition used by Kirzner. Entrepreneurial alertness is to be "understood as the capacity independently to size up a situation and more correctly reach an imagined picture of the relevant (as yet indeterminate) future. All of us share in this ability to some extent . . . But some have higher degrees of this ability."[15]

Indeed, who would venture to deny that each of us, at least to some extent, manages to size up a situation and correctly reach an imagined picture of the relevant future?[16] However, Kirzner's conception of the communicative function of disequilibrium prices relies on something entirely different from alertness in the above sense. He claims that

> it is the *prospective gain offered by [future] realities* which "switches on" entrepreneurial alertness.[17]

[14]Kirzner, *The Meaning of Market Process*, p. 36. He also uses other expressions for this claim. Thus he says, for example, that "opportunities for pure profit [are] able to attract the attention of the most alert entrepreneurs," idem, *Perception, Opportunity, and Profit* (Chicago: University of Chicago Press, 1979), p. 151. See also Israel M. Kirzner, *Discovery and the Capitalist Process* (Chicago: University of Chicago Press, 1985), pp. 27ff, 96, 132. Kirzner also advances Hayek's claim that a mode of organization can generate learning, see, *Perception, Opportunity, and Profit*, p. 147; and Hayek, *Individualism and Economic Order*, p. 95). Esteban Thomson, a student of Kirzner's, puts forth the same argument: "Market prices . . . are not merely an efficient way of aggregating and transmitting information already known by someone but, more important, they are the stimulators of a discovery process." Esteban Thomson, *Prices and Knowledge* (London: Routledge, 1992), p. 37.

[15]Kirzner, *The Meaning of Market Process*, p. 26.

[16]This point is lucidly stated by Hans-Hermann Hoppe in "On Certainty and Uncertainty, Or: How Rational Can our Expectations Be?" *Review of Austrian Economics* 10, no. 1 (1997): 49–78.

[17]Kirzner, *The Meaning of Market Process*, p. 27.

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> We know very little about the precise way in which pure profit opportunities attract entrepreneurial attention. But there can be little doubt about the powerful magnetism which such opportunities exert.[18]

Kirzner has invited us, without supporting argumentation, to share his belief in what could be labelled an attraction or revelation theory. For if action is conscious behavior, what does it mean that price spreads *cause* action? There must be a sort of mechanism that brings price spreads to the attention of some entrepreneurs. Price spreads must then be conceived of as somehow jumping into an entrepreneur's consciousness without requiring any prior action on his part. In general terms, Kirzner's conception implies that we (or some of us) do have information about an object because the object itself puts it somehow in our consciousness. We are passive and the object is active.

Of course, this is not true. The objects in our environment are as they are—whether we know something about them or not. However, without conscious action on our part we will never know anything about them. Or could you even describe the color of the seat you sit upon right now without consciously looking at it once again? Could you even say precisely how many steps one has to climb to get to your hotel room without counting them? There is an infinite number of questions of this kind, and each time the answer is no. It is not the objects that attract our action. We have to act to make them enter into our consciousness.

To be sure, an object must be there to be perceived. Its existence is a necessary condition for its being perceived. Yet a perception is always an action, that is, the manifestation of a choice; and choice is in no known way determined by any object. Thus, without consciously taking notice of the prices that are formed on the market we cannot possibly know about them. As a consequence, we cannot be attracted by prices and price spreads, either.

Price differences in the same market are no exception. Even if there are different prices at the same time and in the same geographical area, entrepreneurs have to consciously look for them. They have to *act* in order to know where to buy and where to sell.

At each moment there is probably an infinite number of undiscovered price spreads. We would all be much better off if Kirzner was right and these price spreads were revealed to some of our fellows. They could stay at home, sit in their armchairs and reap some pretty profits. Unfortunately, this is not how things happen in our world. It is therefore impossible to conclude with Kirzner that

[18]Ibid., p. 160.

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"*this very spread* between high and low prices *suggests* to some alert entrepreneurs that arbitrage profits may be won."[19]

Kirzner does not claim that *every* alert entrepreneur will be attracted by profit opportunities. However, this is no solution to the difficulty that his attraction theory faces. In a sense it rather creates additional difficulties. For one still has to explain *how* an object, by its sole existence, can enter our consciousness. Yet, now, one also has to explain *why* some persons are more susceptible to price spreads than other persons.

However, even if one ignored these objections and even if one assumed, for the sake of argument, that alert entrepreneurs could somehow know the marginal value product of factors of production, the attraction theory would still be contradictory. For either a factor of production has already been sold on the market or not. If it has been sold at a price below its discounted marginal value product then there is a profit opportunity. Yet, in this case, it would be too late for an alert entrepreneur to intervene, for the very reason that it already has been bought by a competitor. If, by contrast, that factor has not yet been sold to anybody then there is no price spread. As a consequence, no alert entrepreneur *can* be attracted to purchase this factor. Thus, the attraction theory is invalid even on its own assumptions.

Kirzner would probably deny that his theory leads him close to the grounds of a somewhat crude materialism. He sometimes emphasizes that one "can never say that alertness rendered its possessor sure that he would successfully discover that which he later discovers."[20] However, one should not overlook that his attraction theory is of crucial importance to what he considers to be the central theorem of economics, namely, the theorem that "demonstrates the equilibrative and coordinative tendencies in the market process."[21] This theorem, as Kirzner understands it, rests on the notion of a systematic learning process that is generated throughout subsequent time periods.[22]

[19]Ibid., p. 146, emphasis added.

[20]Israel M. Kirzner, *Discovery, Capitalism, and Distributive Justice* (Oxford: Basil Blackwell, 1989), p. 24; see also idem, *Discovery and the Capitalist Process*, p. 109.

[21]Ibid., p. 160.

[22]Kirzner did not always advocate an attraction theory, see *Competition and Entrepreneurship*, p. 227, and idem, *Perception, Opportunity, and Profit*, p. 130. Yet, he always believed that a theory of the market process has to rely on a way to determine choices by the physical environment of action. In his *Competition and Entrepreneurship*, he did not conceive of this determination as running through price spreads. Rather he stressed, in a more general way, that the "newly acquired information concerning the plans of others can be expected to generate, for the succeeding period of time, *a revised set of decisions*. The overambitious plans of one period will be replaced by more realistic ones; market opportunities overlooked in one period will be exploited in the next." Ibid., pp. 10 and 70ff; also see *The Meaning of Market Process*, pp. 48, 16, 129. To be sure, this is mere assertion as well. Nowhere does Kirzner give an argument as to *why* the plans will be revised and *why* they will be more realistic.

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Now such a theorem must of necessity show that discoveries (that is, pertinent judgments) are in some way determined by the objective conditions of action. If discoveries were determined by choice alone, such a demonstration would be impossible, as choice implies that one can err. Hence, Kirzner's central theorem requires that discoveries be explained by factors other than choice. This is precisely what Kirzner attempts to do with his attraction theory. Indeed, it would be insufficient for his purpose to merely stress the "motivation to see relevant facts as they are."[23] For such a motivation alone would, of course, not assure any success. It is not sufficient to claim that entrepreneurs are alert if one wants to prove the existence of a Kirznerian equilibrating process. One has to show *that* they succeed and why. Above we have seen that Kirzner can hardly be said to have solved this problem. The reason is, of course, that one cannot think of action apart from choice. Yet, does this mean that it is vain to look for any tendency of the market toward equilibrium? Be that as it may, even if the analysis of equilibrium or equilibration were defective it could hardly be helpful to supplement it or to replace it with another fallacious theory.

The Consequence: Empiricism

By the way, Kirzner seems not to be very convinced of his proof of equilibration, either. Above we have noted that at the bottom of Kirzner's attraction theory there is nothing but his *belief* in it. This is no exaggeration. Indeed, Kirzner is very conscious that this is the basis of his theory. Consider the following statements:

> It can be shown that our confidence in the market's ability to learn and to harness the continuous flow of market information to generate the market process depends crucially on our belief in the benign presence of the entrepreneurial element.[24]

> An assertion that the attempted execution of a set of incompatible plans will set in motion a systematic series of plan changes tending toward equilibrium cannot be made on purely logical grounds. Such an assertion must depend on a postulated propensity on the part of market participants to learn the correct lessons from their experience.[25]

This reliance on mere assertion and on an appeal to share in his belief indicates that Kirzner has abandoned the idea of praxeology, that is, of a logic of the social phenomena. Indeed, his empiricism has constantly grown over the years.[26] In his last book he explicitly says:

[23]Kirzner, *Discovery and the Capitalist Process*, p. 83.
[24]Kirzner, *Competition and Entrepreneurship*, p. 14.
[25]Kirzner, *Perception, Opportunity, and Profit*, pp. 24 and 33.
[26]Cf. also Eran Binenbaum, "Kirzner's Core Concepts," in *New Perspectives on Austrian Economics*, Meijer, ed., p. 146ff.

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> economic science has always proceeded from the important empirical circumstance of economic order. . . . The market obviously works. That the market works is perhaps the most significant lesson of modern history.[27]

> It is the central tenet of market process theory, under the present variant of it, that despite the complexities thus introduced by continually changing UV's [underlying variables], the essential character of the market process, as a matter of historical experience, does remain largely intact.[28]

This is not the way Mises conceived of the market or of the relationship between the historical and the theoretical branches of the social sciences. It is an open question whether market-process analysis of the Kirznerian variant is not essentially a kind of historical investigation. However, we cannot address this topic at this place as our purpose is more limited.

Robbinsian Economizing and Kirznerian Entrepreneurship

From what has been said so far it follows that Kirzner's whole characterization of entrepreneurial activity as a resourceless discovery[29] is unfounded. For if action implies that scarce means are employed in the pursuit of ends, and if one has to act in order to perceive anything whatever, then there can be no such thing as a discovery—or better: a judgment—without the disposition of one's brains and sensory apparatus. There can be virtually no activity at all without at least *some* property.[30] As a consequence, it would be equally impossible to realize any judgment on the market without becoming a capitalist. Likewise it is inconceivable to be simply a capitalist lending funds to an alert idea man. For doing this, one would at least have to make the discovery that this credit is at the moment the best way to use one's property.[31]

We have seen that the root of Kirzner's errors concerning entrepreneurial discoveries lies in his attempt to determine choice—if only implictly. Choice is

[27] Kirzner, *The Meaning of Market Process*, p. 35.

[28] Ibid., p. 43.

[29] "What the introduction of the pure entrepreneur means, however, is that for our analysis we create a decisionmaker who starts without any means whatsoever." Kirzner, *Competition and Entrepreneurship*, pp. 40, and 16, 22, 44, 47ff, 53f, 83.

[30] Even though Mises advocated a functional distinction between capitalists and entrepreneurs he emphasized that "it is impossible . . . to imagine an entrepreneur without any resources" and that entrepreneurial risks "are inseparable from the ownership of the material means of production" (my translation). "Les hypothèses de travail dans la science économique," in *Cournot, nella economia e nella filosofia*, Padora, ed. (Venice: Facoltà de economia e commercio, 1939), p. 118. See also Shmanski, "The Relevance of Policy in Kirznerian Entrepreneurship," pp. 214–19.

[31] Cf. Murray N. Rothbard, "Professor Hébert on Entrepreneurship," *Journal of Libertarian Studies* 7, no. 2 (1985): 283ff. It is remarkable that nowhere does Kirzner address this critique.

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the universal problem with which acting man is confronted. At each moment he has to choose the supposedly most important action that can be executed. This kind of judgment is the cornerstone of economic science. It is well known that Kirzner tends to qualify this. All of his work—virtually all of his articles—starts from a critique of what he calls the "Robbinsian economizer."[32]

Kirzner claims that the problems of real life are disfigured if one considers the economic data to be given to the market participants. In Kirzner's eyes, if a datum is given this means that it is *known* to some or all market participants.[33] As a consequence, he emphasizes that the market participants have to discover the data. If the latter are only incompletely perceived, there can be something like "sheer ignorance" of the present data. It is through the market process that the data become known as they are discovered. Kirzner further argues that what counts is not equilibrium and perfect knowledge but equilibration and discovery. Let us not waste our time, so the argument goes, with the never-never land of the evenly-rotating economy and perfect knowledge. Let us rather focus on our way to acquire knowledge and thus approach equilibrium in a process of equilibration.

One cannot deny that not all data are given to us in the sense that we know them. However, it is a different question whether this was claimed in Lionel Robbins's *The Nature and Significance of Economic Science*. And it is also a different question whether, if Robbins did do so, the Kirznerian entrepreneur would be a viable alternative.

An impartial reader of Robbins's above-mentioned book cannot help but wonder what Kirzner's critique is based upon. Kirzner rarely gives quotations to support this argument, and it is only in his work *The Economic Point of View* that he quotes at length from Robbins.[34] Yet even in these quotations nothing can be found which could possibly support his claim against Robbins. To avoid any misunderstandings: I do not intend to say that nothing can be found in these quotes that would not be worthwhile criticizing. However, it is obvious that Robbins does not consider the ends of action to be *known*. Rather, he explicitly states that, for economic theorems to be valid, the concrete means-ends frameworks are irrelevant.[35]

[32]Cf., Kirzner's *Competition and Entrepreneurship*, pp. 33f and 71ff; idem, *Perception, Opportunity, and Profit*, pp. 5ff and 167; idem, *Discovery and the Capitalist Process*, pp. 81f, 153ff; and idem, *The Meaning of Market Process*, pp. 124ff.

[33]Cf., Kirzner *Competition and Entrepreneurship*, pp. 29, 108, 118; idem, *Perception, Opportunity, and Profit*, pp. 14f; idem, *Discovery and the Capitalist Process*, p. 154; and idem, *The Meaning of Market Process*, p. 154f.

[34]Israel M. Kirzner, *The Economic Point of View* (New York: D. Van Nostrand, 1960), pp. 108ff.

[35]Lionel Robbins, *An Essay on the Nature and Significance of Economic Science*, 2nd ed. (London: Macmillan, 1935), pp. 24ff.

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Perhaps Kirzner's purpose is not to criticize Robbins but some contemporary microeconomic textbooks featuring a caricature of acting man. Thus, he points out "that the purely allocative decision never does occur, and that in fact it is sheer illusion to imagine that economic science can ever provide the kind of precision suggested in microeconomic textbooks."[36] However, in this case it would be inadequate to charge Robbins with the fallacies of some writers who are (or can be considered to be) inspired by his work. And still the question remains, then, whether the emphasis on discovery and knowledge represents any conceivable advance over the emphasis on choice.

Of course, we do not know everything in our environment in the sense that we have already experienced it. But this is completely irrelevant for the problem of choice. For to choose correctly does not mean that one has experienced all relevant data, but that one acts according to a correct *judgment* upon these data.[37] That data are given does not mean that they are known. It means rather, that our action is confronted with them, be they means or obstacles. Yet they *are* means and obstacles independently of the question whether we know them or not. It is also irrelevant whether a datum does already exist at the moment of our decision. If it comes into existence only in the future it is no less a datum than any other. For our action, it is then given in the same sense as the presently-existing data are given, too. Entrepreneurial appraisements of the factors of production do not presuppose information about the future. They are judgments based on estimates, that is, judgments about the future.[38]

Does all this mean that knowledge has no bearing on action whatever? Indeed, one cannot avoid this conclusion by saying that most of our past knowledge can successfully be applied in the future. For the very question is *why* this is so. The validity of empirical knowledge has been established by experience, and all our experiences are determined by the totality of their conditions. Yet,

[36]Kirzner, *Discovery and the Capitalist Process*, p. 83.

[37]This is regularly pointed out by Kirzner's critics. See Jack High, "Alertness and Judgment: Comment on Kirzner," in *Method, Process, and Austrian Economics*, Israel M. Kirzner, ed. (Lexington, Mass.: Lexington Books, 1982), p. 165; and Emile Wubben, "Austrian Economics and Uncertainty," in *New Perspectives on Austrian Economics*, Meijer, ed., p. 130f.

[38]This crucial fact has already been stated by Henry Hazlitt: "It is not enough that the entrepreneur be 'alert' and that he 'perceive' an opportunity; he must *act* on his alertness and perception. . . . By omitting this link [Kirzner] tends to overstress the entrepreneur's alertness and perception while under-emphasizing his courage in taking risks. . . . It is not always true that the entrepreneur perceives an opportunity. He *thinks* he perceives it. He perceives an *apparent* opportunity. In fact, *he is betting on an assumed future condition*. What he acts on may not be a perception but a *guess*. . . . Every entrepreneur is pitting his own guess or 'perception' against the composite guess or perception of all the rest." Hazlitt, "Review of *Competition and Entrepreneurship*," *The Freeman* (December 1974): 759.

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the conditions of action are not immutable. Rather, they change from day to day. Here lies the problem of the application of past knowledge. We have to *judge* whether the same conditions will prevail in the future as well. To this task all our empirical knowledge is of no help.

Therefore, there can be no such thing as a "generation of knowledge" through disequilibrium prices. The latter do not "reveal, to alert market participants, how altered decisions on their part . . . may be wiser for the future."[39] No past experience tells us what we should expect for the future to come. Neither can it tell us which actions we should choose.

Each action presupposes an ingredient that is entirely distinct from knowledge and information, namely, a judgment upon the conditions prevailing in the future. Why, then, do we need the Kirznerian entrepreneur at all?[40] Even Kirzner himself sometimes describes the Robbinsian economizers as "decision makers [that] are passive price-takers, simply optimizing against the background of *assumed* data."[41] Thus Robbinsian economizers do not behave as mechanically as Kirzner would have us believe them to be. At least they anticipate the future. They thus cannot be simple price-takers. Kirzner would surely retort that nothing in their behavior assures equilibration. However, as we have seen, nothing in his concept of an entrepreneur can assure this, either. Kirzner's argument, therefore, boils down to saying that "some assumptions about the future prove to be profitable whereas others do not; *therefore* the former are 'entrepreneurial discoveries' whereas the latter are the 'data' assumed by Robbinsian economizers." True enough, but this kind of wisdom would not require an economist.

Searching for Knowledge of the Future: the Road to Shackleanism

Kirzner's emphasis on discovery and equilibration is not necessary to give meaning to any sound economic doctrine. As we have already noted, in its attraction-theory version it merely leads to additional problems. Now we have to focus on another area of difficulty that inevitably follows from considering knowledge problems as the cornerstone of economics. For the talk of knowledge and sheer ignorance leads ultimately to what is erroneously called extreme or radical subjectivism (erroneously, because it is rather a spurious subjectivism). If

[39]Kirzner, *The Meaning of Market Process*, p. 146.

[40]Roger Garrison remarks perceptively that it is a "fundamental point of logic" that at "some points in the analysis . . . an entrepreneurial function lying outside the supply-and-demand framework is necessary." "Equilibrium and Entrepreneurship," *Advances in Austrian Economics* 2 (1995): 68 and 76. However, it is not alertness that fulfills this function but action based on a judgment about the future.

[41]Kirzner, *Competition and Entrepreneurship*, p. 42, emphasis added. See also idem, *The Meaning of Market Process*, p. 129.

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knowledge can only be acquired after perception, then economics (and all other social sciences, too) can only be an empirical, *ex post* science of human action. Now, strictly speaking, *all* knowledge that we ever acquire is acquired *ex post*, i.e., after a perception.[42] We always have to advance additional reasons to argue for the more or less universal validity of a perception. Yet, the spurious subjectivists just claim (correctly) that there can be no present experience of future events. From this they infer that there can be no scientific statements about the future, either. For them, the future is kaleidoscopic, veiled and, in principle, unknowable.

Emphasis on discovery and equilibration cannot avoid these conclusions at all. It is vain to think that there is a kind of knowledge-producing mechanism called equilibration. Despite all claims to the contrary, this kind of a mechanism is the very core of Kirzner's comprehension of the market. One may discuss the question whether it is really a mechanism that is at stake. But it is hardly possible of denying that Kirzner's theory of equilibration aims at and relies upon statements about the systematic nature of entrepreneurial discoveries. Call this systematic nature of discoveries a mechanism or call it something else—the crucial point is that there must be a constancy that links perceptible events and their perception, that is, their discoveries. Otherwise, one could not speak of a theory at all, for a theory always aims at the establishment of general rules. There cannot be such a rule without constancy.

Of course, neither Kirzner nor anybody else has succeeded in elaborating such a theory. However, we have to address the question of whether it is at least conceivable that such a theory can be constructed. For in this case, Kirzner's attempts could be considered to be a quite normal failure but not without some merit. Unfortunately this is not the case. The notion of a constant relationship between perceptible objects and their perception, which must be rejected. It is not a viable approach to economics at all. We know nothing about the precise reasons for perceptions.

This criticism has already been noted above. The only way to counter it is to claim that, in the course of time, acting man discovers more and more of the environment of his actions. Once we have discovered an object, we learn each day to deal a little bit better with it. As time goes by, we can better discern what kind of perceptions it does permit under what circumstances.

[42]This point is stressed by all subjectivists. Cf., for example, Ludwig Lachmann, *Expectations and the Meaning of Institutions*, Don Lavoie, ed. (London: Routledge, 1994), esp. chaps. 16 and 17; Brian J. Loasby, "Economics of Dispersed and Incomplete Information," in *Method, Process, and Austrian Economics*, Kirzner, ed., pp. 122f; G.L.S. Shackle, *Epistemics and Economics* (Cambridge, England: Cambridge University Press, 1972), p. 91.

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Even if this is true, let us note three points. First of all, it does not concern the lack of a viable perception theory. The proposition that, once we know something, we know it for all time does not answer the question of how we came to know it. Furthermore, this proposition ignores the fact that the conditions of action do not cease to change. Therefore, the knowledge that we acquired through an *ex post* evaluation of the past cannot simply be applied again in the future.[43] Yet most importantly, it merely refers to objects different from human action. But what about action itself? What about choice and perception? Can choice and its offspring, prices and price spreads, be studied with the same results as the dead matter around us? The answer to this question is no. Not only is it impossible to deduce choice from any other conditions of action, there also *can* be no theory featuring the causes of choice. Such a theory would have to assume that there was something like constancy in the thought of acting man. In other words, such a theory would have to presuppose that man cannot learn; this, however, is self-defeating.[44]

To be sure, no entrepreneur can base his judgments on the sole analysis of conditions of action other than choice. He has to analyze choice as well. Yet, this he must do in the way of thymological understanding.[45] Thus, he can never arrive at any general conclusions. There is no possibility to say in a general manner under which conditions our discovered knowledge about price spreads will be valid.

The emphasis on knowledge and discovery cannot avoid the pitfalls of spurious subjectivism. However, the latter doctrine is definitely not the position Kirzner advocates. In *The Meaning of Market Process,* he emphatically refutes the case of spurious subjectivism. He tries to defend what Roger Garrison calls the Austrian middle ground.[46] However, on the basis of his own account of economic doctrine, this would be an impossible undertaking. If equilibrium analysis presupposes that all data are *known* to each market participant, one cannot counter the arguments of the spurious subjectivists. Yet, in his refutation of the latter, Kirzner does not try to show that they have given a wrong account of the allegedly-important problems of knowledge and sheer ignorance. Rather, he makes an excellent case for common sense, and this case he states without recourse to knowledge and ignorance, but with emphasis on action and choice. He says:

[43]Cf. on this point Salerno, "Mises and Hayek Dehomogenized": 126f.

[44]Cf. Hans-Hermann Hoppe, *Kritik der kausalwissenschaftlichen Sozialforschung* (Opladen: Westdeutscher Verlag, 1983), and idem, *A Theory of Socialism and Capitalism* (Boston: Kluwer, 1989), chap. 6.

[45]Cf. Ludwig von Mises, *Theory and History* (Auburn, Ala.: Ludwig von Mises Institute, 1985).

[46]Cf. Roger W. Garrison, "Austrian Economics as the Middle Ground," in *Method, Process, and Austrian Economics*, Kirzner, ed., pp. 131ff.

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> The usual, layman's, perception of human decisions is that some of them are taken wisely, judiciously, successfully. These are the decisions which, in retrospect, one recognizes as having been crucial to the achievement of some desirable outcome. Other decisions, the usual perception has it, turn out to have been unsuccessful; in retrospect, at least, they are seen to have been mistakes. . . . Here we have the nub of our apparent disagreement with the radical subjectivists: is it or is it not meaningful to describe a decision as having been appropriate, in the light of subsequent events, or as having been inappropriate?[47]

What are these statements other than an implicit acknowledgement of the irrelevance of knowledge problems? In any case, they do not mark a new turn in Kirzner's thought on these problems. In a revealing passage from his *Competition and Entrepreneurship*, he made the following remarks:

> My discussion of entrepreneurial alertness has deliberately avoided its speculative character. I have of course recognized that in a world of uncertainty every entrepreneurial decision, no matter how much alertness it reflects, must to some extent constitute a gamble. But it has been my purpose to point out that the entrepreneur's decision—despite its unavoidably speculative character—represents his judgment that an opportunity for profit *does* exist. All human action is speculative; my emphasis on the element of alertness in action has been intended to point out that, far from being numbed by the inescapable uncertainty of our world, men *act upon their judgments* of what opportunities have been left unexploited by others.[48]

This is the common ground of sound economics. However, with regard to Kirzner's theory of discovery and equilibration we are unconvinced. As will be seen in the next section, Kirzner's contributions are defective where one would least suspect them to be so, namely, in their account of the market process as it was conceived by Böhm-Bawerk and Mises.

The Case for Property and Calculation

Does Market Process Analysis Rely on Knowledge Problems?

In this section it will be argued that the problems of action that underlie the fashionable expressions of market process and knowledge can be entirely analyzed in terms of property and choice. Let us first take a look at the way in which prices for capital goods are formed on the market. This process has found its

[47] Kirzner, *The Meaning of Market Process*, pp. 23f.
[48] Kirzner, *Competition and Entrepreneurship*, pp. 86f.

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first statement in Böhm-Bawerk's *Positive Theory of Capital*[49]; Mises called it the market process.[50] The advocates of the alleged importance of knowledge problems claim that the market process is beneficial because it is a device to *diffuse and communicate* knowledge. However, this is not what a sober analysis reveals.

There are two steps that have to be distinguished in the market process, namely, the formation of prices for consumer goods and the formation of prices for capital goods. The former depends entirely on the individual values of the consumers. The more they appreciate a product the more they will be ready to give in exchange for it. This has direct repercussions on the market for capital goods. The higher the proceeds of a product the more can be successfully given in exchange for its factors of production. Now, what is implied in the fact that each capital good will be exchanged against the highest price its owner can obtain? It means that only the supposedly most-value-productive enterprises can be realized. All other entrepreneurs simply cannot bring the needed capital goods into their possession. They cannot pay prices as high as their competitors.

What role does the knowledge of the market participants play in this analysis? In particular, is any communication or diffusion of knowledge necessary in order to bring the above result? The answer to the latter question clearly is in the negative. The competing entrepreneurs may know nothing at all about other possibilities to employ the factor of production they all want to buy. However, this does not alter in the least the conclusion that, as a consequence of the formation of market prices, only the supposedly most-value-productive enterprises are realized. Out of the available alternatives known to each partner in exchange, none is, at this moment, more beneficial than the exchange itself. This conclusion is a necessary implication of any exchange. Thus, even if every single market participant just knows how to realize his own project and rests ignorant about all other opportunities, the market process still leads to beneficial results.[51]

The distinguishing feature of the market process does not lay in the communication of knowledge. The formation of prices rather implies a *comparison* of projects in value terms. This comparison has nothing in common with a dissemination of knowledge. It is through action that the competing projects are com-

[49]See in particular Eugen von Böhm-Bawerk, "The Law of Cost," in idem, *Capital and Interest*, vol. 2 (South Holland, Ill.: Libertarian Press, 1959), pp. 248–56.

[50]Cf. Mises, *Human Action*, pp. 333ff. He also uses the expression "pricing process" and "process which makes the prices of the factors of production spring from the prices of products." Ibid., p. 338.

[51]See Hayek's brillant article on "The Meaning of Competition," in idem, *Individualism and Economic Order*, pp. 92ff.

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pared. *Because* an entrepreneur pays higher prices for the factors of production, his project must realize higher (discounted) proceeds.

The market process is thus inextricably linked to choice and action. Knowledge and communication, on the other hand, are secondary.[52] This is the core of the analytical problems of Kirzner and his followers. To be sure, from each of Kirzner's articles we learn about another facet of market process. However, what we learn about is a Kirznerian market process the central idea of which is some mystical revelation through prices. This revelation theory has nothing in common with Misesian market-process analysis. It is, therefore, nothing short of ironic when Kirzner regrets "a certain tendency, present in a number of recent expositions of Mises's work, to de-emphasize (or flatly to deny) the centrality of the idea of the market as a process in the Misesian system."[53] Indeed, nobody has probably done more harm to this idea than Kirzner himself.

It is one thing to note Kirzner's noble modesty in emphasizing that his own work is but an elaboration of Mises's writings. It is another question whether this "elaboration" does not, as a matter of fact, amount to negation of the theory. Kirzner claims that, in regard to market process analysis, there is no difference between Mises and Hayek whatever.[54] Nothing could be more contrary to truth, though. What Hayek and Kirzner have in mind is a learning process. Ultimately, this is a process leading to perfect knowledge, that is, to equilibrium. In other terms, Kirzner as well as Hayek try to explain *why and how* we learn about the truth and thus about true prices. They believe that such an explanation can be provided because this "process by which facts are hammered into human consciousness is not wholly ungoverned by the logic of human action; it fits naturally in the tendency for alert acting human beings to notice what is likely to be of service to them."[55] Kirzner's solution to this problem is that the necessary information is revealed through "wrong" actual prices. Mises, however, was not concerned about this problem at all. To Mises, the analysis of the market process was meant to uncover the implications of human action for the formation of prices on the market:

> In supplying the market with those consumers' goods in the sale of which the highest profits can be earned, they create a tendency toward a fall in their prices.

[52]For an excellent exposition of the meaning of the market process see Salerno, "Mises and Hayek Dehomogenized": 124ff.

[53]Israel M. Kirzner, "Reflections on the Misesian Legacy in Economics," *Review of Austrian Economics* 9, no. 2 (1996): 144–45.

[54]Ibid.: 146–47.

[55]Kirzner, *Perception, Opportunity, and Profit*, p. 30.

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> In restricting the output of those consumers' goods the production of which does not offer chances for reaping profit, they bring about a tendency toward a rise in their prices. All these transformations go on ceaselessly and could stop only if the unrealizable conditions of the evenly rotating economy and of static equilibrium were to be attained.[56]

Mises makes no attempt to solve the problem that Hayek and Kirzner are eager to solve, namely, why equilibrium is likely to come about. Rather he does not bother about this question at all. In Mises's eyes equilibrium is a necessary tool of *analysis*. Yet the validity of economic theorems does not depend at all on the question why and how equilibrium should ever be realized. It is precisely this point that is denied both explicitly (Hayek[57]) or implicitly (Kirzner) by all would-be market process theorists. Despite all their disdain for mathematical equilibrium theorists they are arguing on the very same grounds. They endlessly repeat the term "market process." Yet, they strongly believe that the reality of equilibrium has to be proven and explained.

All this is of no relevance for Mises's market process analysis. From the Misesian perspective there may be equilibrium and disequilibrium prices. One might even follow Kirzner and say that the market process consists in the continual "correction" of disequilibrium prices that occurs in the course of entrepreneurial competition.[58] Yet, it is important to see clearly what that means. The correction is in fact an implication of any successful action on the market. The point is that prices are always formed according to the best knowledge available to property owners. Hence, the sole fact that I sell my tomatoes to A and not to B implies that, *ex ante* at least, this use of my property, and thus the price being established on the market, is better than any other possible use of it (and thus any other price) that could have been realized otherwise. This holds true for disequilibrium and for equilibrium prices. There are no separate explanations for them. All prices are market prices, and as such they have to be explained.

It can hardly be emphasized enough that these different views of the market process have momentous implications. The most important one concerns the very dynamics of market process analysis. The word process means that this kind of analysis is supposed to explain the succession of events in time. This in turn

[56]Mises, *Human Action*, p. 336. There are, of course, countless other statements on how Mises saw the market process. However, this quote has been given by Kirzner ("Reflections on the Misesian Legacy in Economics": 145) to show that Mises also had in mind a corrective learning process. However, no such interpretation can be inferred from it.

[57]Cf. Hayek, *Individualism and Economic Order*, p. 33.

[58]Kirzner, "Reflections on the Misesian Legacy in Economics": 144ff.

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presupposes that one is able to establish a causal link between the events that follow one another. Kirzner's basic error consists in his attempts to link discoveries (or true judgments) to former events. As no such links can, without inner contradiction, be claimed to be necessary, that is, generally and apodictically valid, Kirzner makes assertions of alleged empirical evidence to make his case at all. Thus, the theorems that he is able to derive must inevitably be empirical. It is for these reasons that Kirzner now considers economics to be based on empirical postulates or empirical facts. On the other hand, the Misesian view on the dynamics of the market process starts from the recognition of the universal fact of scarcity. This alone suffices to arrive at *a priori* theorems about the succession of real events in time. Some examples are: if I consume more now I shall of necessity be unable to consume as much in the future as I would if I saved more; or: if I overestimate the quantity of means at my disposal I shall nevertheless be led to discover my error sooner or later in the future.

Hence, there doubtlessly is no approach to market-process analysis that is commonly shared by Böhm-Bawerk and Mises on the one hand and by Hayek and Kirzner on the other hand. Most importantly, however, only Mises's analysis is a viable option to build upon. It does not contain the fallacies of the Hayek–Kirzner approach that have been identified above.

Property and Knowledge

Above we have argued that the advocates of the pre-eminence of knowledge problems in economics cannot adequately deal with the fact that there can be no present experience of future events. However, there is still a more fundamental condition of action. This is the fact that knowledge as such is never scarce. Knowledge problems thus do have a place in economics only insofar as knowledge has to be selected for application. Yet the selection of knowledge depends entirely on the property of the acting person.

At each moment we dispose of a myriad of information, and we often know of many ways to achieve any given end. For example, if my apartment is cold, I could keep my body warm through gymnastics or additional sweaters. I could also burn parts of my furniture or simply turn on the heating and pay higher bills. I could also sit down in my armchair and invent a new technology permitting one to heat my apartment at half of the present cost.

To be sure, the latter alternative is the most elegant one. In any case, as conditions do not cease to change, we constantly have to acquire new knowledge if only to conserve our present standard of living. However, economic science does not have to deal with the factors conditioning the acquisition of knowledge. We may also leave the question open whether economics *can* deal with them. This

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is of no importance for the issue at hand. For the moment we are entirely unconcerned with the creation of knowledge, that is, of judgments that prove to be successful in action. We do not bother about the way we reduce our sheer ignorance. Rather we have to consider the principles that govern the selection of the judgments that we actually apply in our actions.

Consider the problem of lighting your cigarette. Do you use a flame-thrower, matches, heat your coke-oven until it is red-hot, or wait until the next lightning-flash strikes a piece of wood? Any solution could be most appropriate under certain conditions. Or, consider the myriad of technically-possible ways to get from Harlem to downtown Manhattan. You can take the subway, the express subway, a taxi, your car, rent a bus, rent a helicopter, buy an F-16 and two personal airports, etc. Of course, one would say that the latter alternative is absurd under *normal* conditions. It is always the conditions of action that we deem reasonable or absurd, not the action as such.

The quantities of means we can dispose of—our property—are always limited. Thus, choice implies that some of our ends must remain unfulfilled. We steadily run the danger of pursuing ends that are less important than the ends that could have been pursued. We have to choose the supposedly most important action, though what we choose is how we use our property. Action means to employ our property in the pursuit of what appears to be the most important ends.

In choosing the most important action we implicitly select some parts of our technological knowledge for application. In other terms, our choices imply a judgment upon the *importance* of our technological knowledge under the expected conditions of our action. This economic judgment is our only concern. Technological knowledge *as such* is immaterial for economics. Even if information on particular circumstances of time and place was communicated through prices this would be of secondary importance. Yet, without reference to our property we could not possibly select knowledge in terms of importance. Moreover, once we own property we then know which kind of knowledge could be useful. It is this property that directs our learning toward useful channels.

Property in this sense encompasses the disposition of goods. However, there is a more fundamental sense in which economic knowledge is linked to property, namely, to appropriation. This is because the creation of any good is more fundamental than the disposition of this good. Appropriation is at the core of property itself.[59] Thus, the question which kind of technology serves the supposedly most

[59]"Appropriation is a natural phenomenon given by providence, essential to life; property is nothing but an appropriation that has become a right through labor." Frederic Bastiat, "Propriéte et loi," in *Les libéraux*, Pierre Manent, ed. (Paris: Hachette, 1986), p. 230.

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important end under prevailing conditions cannot be answered independently of the property regime. This is of utmost importance.

It is clear that in *all* property regimes the ultimate end of action is to enjoy the services of consumers' goods. And in *all* property regimes consumers' goods can only originate from human productivity, that is, from original appropriation, from production, and from exchange.

However, in capitalism there is but one way to enjoy the goods of our neighbors. One has to acquire them through exchange on the market, that is, one has to give to its owner some other good that he prefers to the one we desire. Yet this good must of necessity have been produced beforehand. Exchange thus implies mutual production of goods or values. It implies further that only value-productive actions prove to be successful. Therefore, only value-productive knowledge is selected and sought.

Of course there can be error and failure. Our technological judgments can be wrong. We can also discover after our action that we have not sought the most important ends under prevailing conditions. However, all this is irrelevant for the question at stake. Under private property, all of our judgments concern the production of goods. Producing goods is the unique occupation of all members of society. In this endeavor they select the knowledge they want to apply.

The case is different in a system featuring a coercive agency. Here, by definition, a knowledge different from value-productive knowledge is, at least sometimes, more important. (The extent of "sometimes" depends on the range of activities and on the permanence of the coercive agency.) There is, for example, the knowledge of how to reap the fruits of other persons' labor without provoking their resistance. There is also the knowledge of how to acquire control and ownership of the coercive agency. And there is the knowledge of how to persuade one's neighbors about the utility of this system, too.[60] One can add an infinite number of items to this list. The result, in general terms, remains the same: a violent agency necessarily affects the knowledge structure of the society upon which it is imposed.[61]

[60]Murray N. Rothbard, *Man, Economy, and State*, p. 776: "In the market, the fittest are those most able to serve the consumers. In government, the fittest are either (1) those most able at wielding coercion or (2) if bureaucratic officials, those best fitted to curry favor with the leading politicians or (3) if politicians, those most adroit at appeals to the voting public." See also idem, *Power and Market*, 2nd ed. (Kansas City: Sheed Andrews and McMeel, 1970), pp. 18ff.

[61]Leonard E. Read has analyzed this effect under the heading of "unnatural specialization." See Leonard E. Read, "How Socialism Harms the Economy," in idem, *Anything That's Peaceful*, 2nd ed. (Irvington-on-Hudson, N.Y.: Foundation for Economic Education, 1992), pp. 78ff. With great clarity he states: "Take, for example, the moon project . . . putting aside personal prejudices against this multibillion dollar project, it is obvious that it would not, at this time, emerge from the free market. Now, consider the countless specializations that this single government project call into

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Property, Calculation, and the Structure of Production

Yet, this is not all that private property implies for the selection of knowledge. The greatest benefits accrue to those who participate in the division of labor. Most of our knowledge is valuable only because there is a market. As we have noted above, the market process is essentially a selection procedure. All investment projects are compared in terms of value productivity, and only the most value-productive ones are selected (*ex ante*) for execution. On the market, *the totality of individual knowledge is continually compared in value terms*.

The value of the knowledge that the property owners venture to apply is compared through the anticipated exchanges on the market. A calculated profit means that one's knowledge is valuable under prevailing conditions. A calculated loss means that one's knowledge is not of value. Its application would take means away from more value-productive enterprises and thus prevent the application of more valuable knowledge.

To be sure, this comparison does not run in terms of freely-floating bits of knowledge that are detached from private property. Rather, each entrepreneur tries to use his property in the most value-productive way that is known to him. Through the pricing process, this value, productivity is compared to the value productivity that can be achieved by the action of other property owners. The entrepreneur makes an estimate of the proceeds that he will realize through his venture. Then, by means of calculation, the entrepreneur knows how much of his property he can give in exchange for a capital good. He cannot give more than the discounted marginal value product that the capital good will earn. And he can appropriate it only if no other entrepreneur knows of a way to realize a higher discounted marginal value product of this capital good. Thus, each single factor of production accrues to him who knows of the supposedly most value-productive way to use it. This knowledge is marginal value knowledge. It is the knowledge about the most value-productive employment of each of the exchanged goods which, at the time of the exchange, is known to their owners.

It might be objected that one could conceive of market participants who had more value-productive ideas than their fellows but who unfortunately lacked the capital to realize their endeavors. There is no use in discussing the probability of

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existence. Take only one of them: finding out how to cushion the landing of a TV set on the moon. . . . This project qualifies as an unnatural specialization." Ibid., p. 78. He adds: "the fact is that tens of millions of American citizens are now engaged and wholly dependent on *unmarketable* specializations [and] more and more millions are becoming dependent on such forced exchange of their unwanted specializations for those goods and services without which they cannot live." Ibid., p. 80. Cf. also the analogous remarks of Hans-Hermann Hoppe on the effects of socialism on the character structure of society and the evolution of nonproductive personality types in his *A Theory of Socialism and Capitalism*, esp. chap. 3.

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such an event. Indeed, the wealth of a man is often indicative of his expertise. Yet, for the sake of the argument, let us assume the above case to be given. The first thing that such persons could do is to try to convince some of their fellows to lend them the funds necessary for their projects. If they do get the capital, then everything is fine for them and the rest of mankind. However, what if they find nobody willing to support them? Would this not be to the great disadvantage of all the other market participants who are now deprived of the most value-productive investment? Those who argue in this way fail to see that one cannot divide the market at will. A person's property is not only the fund out of which he buys capital goods; it is the fund for his consumption as well. The very fact that our would-be promoter does not obtain the necessary funds means that all other market participants do think other investments to be more value productive. One cannot separate property from the possibility of error; nobody can be free only to succeed. If one fails to use one's property in a value-productive manner, then one consumes it in one's errors.[62]

Let us recall that *ex ante* calculation does not consist of computation based on past market prices; it is a judgment in quantitative terms that relies on an expectation of future prices. However, and this is the important point, *calculation is the source of present market prices* as they are continually formed in the market process. Present prices are starting points for our estimates. We regard them as the products of all prevailing conditions of action. Considering the intervening changes of these conditions we form, by way of *Verstehen*, a judgment upon the prices of the future. Without the basis provided by present money prices, this procedure would be impossible.[63] It is indirectly that present prices permit calculation and thus the selection of the most value-productive technology under prevailing conditions. They can have no communicative function because they are only the, if indispensible, starting point for our understanding of the future. If any prices could have a communicative function it would be future prices, but tomorrow's prices can never be known today.

Moreover, since without private property there could be no successful calculation, marginal value knowledge could not be recognized, either. Property and calculation are clearly prior to the recognition of the knowledge that should be applied.[64]

[62]For analogous reasoning see Murray N. Rothbard, "Toward a Reconstruction of Utility and Welfare Economics," in *On Freedom and Free Enterprise: Essays in Honor of Ludwig von Mises*, Mary Sennholz, ed. (Irvington-on-Hudson, N.Y.: Foundation for Economic Education, 1995).

[63]For the regression theorem see Mises, *Human Action*, pp. 408ff. Of course in the case of barter, Mises realized that past exchange ratios are not necessary to the forecasting of future ones. Ibid., p. 336. On economic calculation and the regression theorem, see also Hülsmann, *Logik der Währungskonkurrenz*, pp. 133ff, 166ff.

[64]It is therefore futile to claim that "the circumstance that in fact current market prices do

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This fact illustrates the most important problem of socialist planning, namely, knowing what to do next. Even if it knew the ends that should be attained, it would be incapable of identifying marginal value knowledge. Hence, it would not know which actions were, at each point of time, most value productive in bringing those ends about. Private property is required to recognize these actions; without it, no capital structure can be built.

Conclusion

We now come back to the question of why "socialist planners would be stymied by inability to perform calculations in the narrow arithmetic sense"[65] even if they possessed all the information conveyed by genuine market prices.

Only past market prices can be perceived and could thus convey any information at all. However, it is not past but future prices that are of any interest to the market participants. Furthermore, as there exists no general relationship between past and future prices one cannot deduce the latter from the former. Thus, it is not knowledge but entrepreneurial *judgment* that drives the market process.

Most importantly, all relevant information (in the economic sense) about technology is *not the cause but the outcome* of action. The market process is not a learning but essentially a selection process. The competition for the factors of production permits only the realization of those technological ideas which, under given circumstances, are supposedly most value productive. This competition, however, relies on calculations. Without them, the marginal value knowledge could not be identified.

Why is it that market prices are superior to the prices that central planners are dealing with? Hayek, Kirzner, and their followers believe that market prices are better because of their *function*, namely, that of communicating information. Mises, in contrast, showed that the primary virtue of market prices is attributable to their *origin*. Genuine market prices originate from voluntary cooperation; they can never be simulated. *They can never be grasped by intellectual inquiries because their significance does not relate to truth or knowledge*. They can only be brought about by entrepreneurial *actions*. For only the unhampered use of private property assures a selection that is inspired by value productivity.

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reflect that corrective market process . . . should convince us that an appreciation of the role of market prices stated in terms of the 'Hayekian' knowledge problem is simply a somewhat differently articulated appreciation for the calculative properties Mises taught us to understand to exist in those market prices." Kirzner, "Reflections on the Misesian Legacy in Economics": 153–54.

[65] Leland B. Yeager, "Mises and Hayek on Calculation and Knowledge": 94.

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On Certainty and Uncertainty, Or: How Rational Can Our Expectations Be?

Hans-Hermann Hoppe

> The honest historicist would have to say: Nothing can be asserted about the future.
>
> Ludwig von Mises[1]

> The future is to all of us unknowable.
>
> Ludwig Lachmann[2]

I

It is possible to imagine a world characterized by complete certainty. All future events and changes would be known in advance and could be predicted precisely. There would be no errors and no surprises. We would know all of our future actions and their exact outcomes. In such a world, nothing could be learned, and accordingly, nothing would be *worth knowing*. Indeed, the possession of consciousness and knowledge would be useless. For why would anyone want to know anything if all future actions and events were completely predetermined and it would not make any difference for the future course of events whether or not one possessed this or any knowledge? Our actions would be like those of an automaton—and an automaton has no need of any knowledge. Thus, rather than representing a state of perfect knowledge, complete certainty actually eliminates the value of all knowledge.

Obviously, we do not inhabit a world of complete certainty. We cannot predict all of our future actions and their outcome. There are in our world surprises. Our knowledge of future events and outcomes is less than perfect. We make errors, can distinguish between failure and success, and are capable of learning. Unlike for an automaton, for us knowledge is valuable. To know something

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[1] Ludwig von Mises, *Theory and History* (Auburn, Ala.: Ludwig von Mises Institute, 1985), p. 203.

[2] Ludwig Lachmann, "From Mises to Shackle: An Essay on Austrian Economics and the Kaleidic Society," *Journal of Economic Literature* 14 (1976): 55–59.

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or not makes a difference. Knowledge is not of predetermined events and states of affairs, but knowledge of how to *interfere with* and *divert* the natural course of events so as to *improve* our *subjective well-being*. Knowledge does not help us predict an unalterable course of events but is a tool of purposefully *changing* and hopefully *bettering* future outcomes and events. Our actions, unlike the operations of an automaton, are not a series of predetermined events which the knower cannot influence and with respect to whose outcome he is indifferent. Rather, our actions are sequences of decisions (choices) of altering the predetermined course of events to our advantage. We are never neutral or indifferent toward the course of future events. Instead, we always *prefer* one course of events over another, and we use our knowledge to bring about our preferences. For us, knowledge is practical and effective, and while it is imperfect and subject to error, it is the only means of achieving human betterment.

II

From the recognition of the fact that perfect foresight eliminates the very need of knowing and knowers, and that such a need only arises if, as in our world, foresight is less than perfect, and insofar as knowledge is a means of bringing about preferences, it does not follow that everything is uncertain. Quite to the contrary. In a world where everything is certain, the idea of certainty would not even come into existence. The idea of certain knowledge requires, as its logical counterpart, the idea of uncertainty. Certainty is defined in contrast to uncertainty, and not everything can be certain. Likewise, uncertainty cannot be defined without reference to certainty, and not all knowledge can be uncertain. It is this latter part of one and the same conclusion which critics of the model of perfect foresight, such as Ludwig Lachmann, have failed to recognize. From the correct insight that we do not inhabit a world of perfect knowledge it does not follow that we live in a world of perfect uncertainty; i.e., in a world with no certainty at all, and from the fact that I cannot predict all of my and others' future actions it does not follow that I can say nothing at all about them. In fact, even if I do not know everything about my future actions, for instance, I do know something to be true about each and every one of them: that I will, as long as I act, employ my knowledge to interfere in the natural course of events so as to—hopefully—bring about a more preferable state of affairs.

Later on, more will be said about the importance of this insight. But it is worth emphasizing from the outset that the idea of perfect or radical uncertainty (or ignorance) is either openly contradictory insofar as it is meant to say "everything about the future is uncertain except that there will be uncertainty—about this we are certain," or it entails an implicit contradiction if it is meant to say

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"everything is uncertain and that there is nothing but uncertainty, is uncertain, too." (I do know such and such to be the case, and I do not know whether such and such is the case or not.) Only a middle-of-the-road position between the two extremes of perfect knowledge and perfect ignorance is consistently defensible[3]: There exists uncertainty but this we know for certain. Hence, also certainty exists, and the boundary between certain and uncertain knowledge is certain (based on certain knowledge).

III

Nothing about the external, physical world is or can be known with certainty—except for those rather abstract but universal and real things that are already implied in the certain knowledge of acting and action: that this must be a world of objects and object-qualities (predicates), of countable units, physical magnitudes, and quantitative determinateness (causality). Without objects and object-qualities there can be no such thing as propositions; without countable units there can be no arithmetic; and without quantitative determinateness—the fact that definite quantities of causes only bring about definite (limited) effects—there can be no ends and means (goods); i.e., no active interference in the course of external events with the purpose of bringing about a more highly-valued end (preferred effect). Apart from the laws of propositional logic, arithmetic, and causality, however, all other knowledge about the external world is uncertain (*a posteriori*). We do not and cannot know with certainty (*a priori*) what kinds of objects and object-qualities exist, how many units of what physical dimensions there are, and what quantitative cause-and-effect relationships exist (or do not exist) between various magnitudes of various objects. All of this must be learned from experience. Moreover, experience is invariably past experience, that of past events. It cannot reveal whether or not the facts and relationships of the past will also hold in the future. We cannot but assume that this will be the case, by and large. But it cannot be ruled out categorically that we might be mistaken, and that the future will be so different from the past that all of our past knowledge will be entirely useless. It is possible that none of our instruments or machines will work anymore tomorrow, that our houses will collapse on top of us, that the earth will open up, and that all of us will perish. It

[3]See Oskar Morgenstern, "Perfect Foresight and Economic Equilibrium," in *Selected Economic Writings of Oskar Morgenstern*, A. Schotter, ed. (New York: New York University Press, 1976), esp. p. 175; Roger W. Garrison, "Austrian Economics as Middle Ground," in *Method, Process, and Austrian Economics*, Israel Kirzner, ed. (Lexington, Mass.: Lexington Books, 1982); idem, "From Lachmann to Lucas: On Institutions, Expectations, and Equilibrating Tendencies," in *Subjectivism, Intelligibility and Economic Understanding: Essays in Honor of Ludwig M. Lachmann* (New York: New York University Press, 1986).

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is in this sense that our knowledge of the external physical world must be ultimately regarded as uncertain.

Notwithstanding this ultimate uncertainty of our knowledge concerning the external world, however, as a result of contingent circumstances, the relative stability and regularity in the concatenation of external objects and events, it has been possible for mankind to accumulate a vast and expanding body of practically certain knowledge. This knowledge does not render the future predictable, but it helps us predict the effects to be produced by definite actions. Even though we do not know *why* things work the way they do, and whether or not they *must* always work in this way, we do know with complete practical certitude *that* and *how* certain things will operate now and tomorrow. One would never know it from the writings of the apostles of radical uncertainty, but an innumerable and growing number of events (outcomes) can be produced literally at will and predicted with almost perfect exactitude. My toaster will toast, my key will open the door, my computer, telephone, and fax will work as they are supposed to, my house will protect me from the weather, cars will drive, airplanes will fly, cups will still hold water, hammers will still hammer, and nails will still nail. Much of our future is, practically speaking, perfectly certain. Every product, tool, instrument or machine represents a piece of practical certainty. To claim, instead, that we are faced with radical uncertainty and that the future is to all of us unknowable is not only self-contradictory but also appears to be a position devoid of common sense.

IV

Our practical certainty concerning future outcomes and events extends even further. There are many future events about whose outcome we are practically certain because we literally know how to *produce* them (the outcome is under our complete practical control). We can also predict with practical certainty a great and growing number of outcomes outside and beyond anyone's control. Sometimes my tools, machines, and products are defective. My toaster does not toast, my telephone is silent, a hurricane or an earthquake has destroyed my house, my airplane crashes, or my cup is broken. I had no knowledge that this would happen to me here and now, and hence I could not have acted differently from the way I did. I am thus taken by surprise. But my surprise and my uncertainty must not be complete. For while I may know absolutely nothing about the single event—this cup will now break, this airplane will now crash, my house will be destroyed in an earthquake two years from now—and thus cannot possibly predict and alter any such event, I may know practically everything with respect to the whole class of events (broken cups, crashing airplanes, earthquakes) of which this single event is a member. I may know, based on the observation of

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long-run frequency distributions, that airplanes of a certain type crash every so often, that one in ten thousand cups produced is defective, that machines of such and such a type function on the average for ten years, and that an earthquake strikes a certain region on the average twice a year and destroys, in the long run, one percent of the existing housing stock per year. Then, although the single event still comes as a surprise, I do know with practical certainty that surprises such as these exist and how frequent they are. I am surprised neither by the type of surprise nor its long-run frequency. My surprise is only relative. I am surprised that such and such happens here and now rather than elsewhere or later. But I am not surprised that it happens at all, here, there, now, or later. In thus delineating the range and frequency of possible surprises, my uncertainty concerning the future, while not eliminated, is systematically reduced.

Cases of limited surprises or reduced uncertainty are, of course, what Frank Knight first classified as "risk" (as opposed to "uncertainty"), and what Ludwig von Mises, building on Knight and the work on the foundations of probability theory of his mathematician brother, Richard von Mises, would later define as "class probability" (as opposed to "case probability")[4]: "Class probability means: We know or assume to know, with regard to the problem concerned, everything about the behavior of a whole class of events or phenomena; but about the actual singular events or phenomena we know nothing but that they are elements of this class."[5] I know nothing about whether this or that cup will be broken, and I know nothing about whether my house or your house will be destroyed by a tornado within the next year, but I do know from the observation of long-run frequency distributions regarding cups and tornadoes, for instance, that no more than one in ten thousand cups is defective and that of a thousand houses in a given territory, no more than one per year on the average will be destroyed. If, based on this knowledge, I adopted a strategy of always predicting that the next cup will not be broken, and that my house will not be destroyed next year, I would commit errors. But in the long run, the strategy would assure more successes than errors: my errors would be 'correct' errors. On the other hand, if I adopted the strategy of predicting always that the next cup will be broken and my house destroyed, I might well be correct. But in the long run this strategy would assuredly fail: I would be erroneously correct. Whenever the conditions of class probability are met and we do not know enough to avoid mistakes altogether but enough to make

[4]See Frank Knight, *Risk, Uncertainty, and Profit* (Chicago: University of Chicago Press, 1971), esp. chap. 7; Richard von Mises, *Probability, Statistics, and Truth* (London: George Allen and Unwin, 1957), esp. chaps. 1 and 3; Ludwig von Mises, *Human Action: A Treatise on Economics* (Chicago: Henry Regnery, 1966), esp. chap. 6.

[5]Ibid., p. 109.

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only correct mistakes, it is possible to take out insurance. As a producer of cups, for instance, I know that on the average I will have to produce 10,001 cups in order to have 10,000. I cannot avoid broken cups, but I can insure myself against the risk of broken cups by including it, as a regularly-occuring loss, in my cost-accounting, and by thus associating a correspondingly-higher cost with my production of cups. Similarly, I cannot avoid tornadoes, but I can insure myself against them. Because tornado losses are large and infrequent in relation to the size and operations of my household, it would be difficult (although not impossible) to provide insurance internally (within my household). But it is possible to pool my tornado risk with yours and that of other households or firms in a given region. Not one of us knows who will be affected by the risk in question, but based on the knowledge of the objective long-run frequency of tornadoes and tornado damage for the entire region, it is possible to calculate a premium against payment of which each one of us can be insured for this hazard.

It is not only the knowledge incorporated in our tools, instruments, and machines, then, which provides practical certain information about our future: in this case, knowledge of how we will generate various singular events. Also, the knowledge incorporated in any form of insurance, whether internally practiced or by method of pooling, represents practical certain knowledge: in this case, knowledge of how to be prepared for various classes of events whose individual occurrence is beyond anyone's control. To be sure, while the conditions of class probability and insurability can be stated exactly, with certainty, the question of whether or not there exist insurable events, which ones, and the various expenses of insuring against them, cannot be answered with certainty. On the one hand, the knowledge of objective probability distributions must be acquired through observational experience, and as is the case for all knowledge based on such experience, we can never know whether or not past regularities will also hold in the future. We may have to make revisions. On the other hand, even in order to collect such information, it is necessary that various singular events be classified from the outset as falling into one and the same class (of events). This cup or tornado and that cup or tornado are both members of the same class of cup or tornado. Yet any such classification is tainted with uncertainty. The joint classification of a series of singular events is only correct (for the purpose of insurance) if it holds that I do not know more about any of the single class members than that each one of them is a member of the same class. If I learned, however, that one cup was made of clay A and another from clay B, for instance, and that this fact makes a difference for the long-run frequency of defects, my initial classification would become faulty. Similarly, I might learn from experience that tornado damage on the eastside of a given valley is systematically higher than on its

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western side. In this case, too, my original classification would have to be changed, new and revised classes and subclasses of insurable events would have to be formed, and new and different insurance premiums would have to be calculated. These uncertainties notwithstanding, however, it deserves to be pointed out that as a contingent fact of human life, the actual range of insurance, and hence of relatively certain information about future events and outcomes, is vast and growing: We know how many ships will likely sink, how many airplanes crash, how often it will rain or shine, how many people of a given age will die, how many hot water-boilers will explode, how many people will be struck by cancer, that more women than men will be affected by breast cancer, that smokers will die earlier than non-smokers, that Jews suffer more frequently from Tay-Sachs disease than Gentiles, and Blacks more from sickle cell anemia than Whites, that tornadoes, earthquakes, and floods occur here but not there, etc. Our future is most definitely *not* unknowable.

V

Little of this ever attracts the attention of theoreticians of radical uncertainty. The existence of a practical working technology and of a vast and flourishing insurance industry constitutes an embarrassment for any theory of radical uncertainty. If pressed sufficiently hard, of course, Lachmann and his followers would probably admit the undeniable and, as if all of this did not matter, quickly move onto another problem. So far, it might be pointed out with some justification, attention has been directed almost exclusively either to the technological rather than the economic aspect of action—to accidents rather than to actions. The phenomenon of radical uncertainty, however, arises in a different arena. While it may be possible to predict the physical outcomes *if* such and such an action is taken, and while it may be possible also to predict the pattern of various physical events entirely outside of human control, matters are completely different when it comes to predicting our own future actions. I can predict that my toaster will toast if I employ it in a certain way, and I can predict that toasters generally do not work longer than ten years, but presumedly I cannot predict whether or not I will actually employ my toaster in the future, nor could I have predicted before it actually happened that I ever wanted—and constructed or bought—a toaster in the first place. It is here, in the arena of human choices and preferences, where supposedly radical uncertainty reigns.

Lachmann and his followers are correct in emphasizing that the problem of predicting my and others' future actions is categorically different from that of predicting the physical outcomes of *given* actions or of *natural* events. In fact, the destructive part of Lachmann's argument is largely correct even though it is

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hardly new (and entirely insufficient to establish his constructive thesis of radical uncertainty).[6] This is the proof that not only the idea of perfect foresight, underlying general equilibrium theory, is mistaken, but likewise the idea, advanced by rational expectations theorists, that all human uncertainty can be subsumed under the heading of insurable risks: that the uncertainty concerning our future actions in particular is no different from that regarding the future of natural events, such that we can, based on our observation of long-run frequency distributions, predict their general pattern in the same way as we can predict the pattern of earthquakes, tornadoes, cancer, or car accidents, for example.

As Lachmann points out, and as Frank Knight and Ludwig von Mises explained long before, the new theory of rational expectations suffers from essentially the same deficiency as the old general equilibrium model of perfect foresight: it cannot account for the phenomenon of learning and hence, of knowledge and consciousness. Rational expectation theorists only replace the model of man as a never-failing automaton with that of a machine subject to random errors and breakdowns of known types and characteristics. Rather than possessing perfect knowledge of all singular (individual) actions, man is assumed to possess merely perfect knowledge of the probability distribution of all future classes of actions. He is assumed to commit forecasting errors, but his errors are always correct errors. False predictions never require a revision of a person's given stock of knowledge. There is no learning from success or failure and, hence, there is no change, or only predictable change, in the future pattern of human actions. Such a model of man, Knight, Mises, and Lachmann agree, is no less faulty than the one it is supposed to replace. It not only stands in manifest contradiction to the facts, but any proponent of this model is also inevitably caught up in logical contradictions.

First off, if our expectations (predictions) concerning our future actions were indeed as rational as rational expectation theorists believe them to be, this would imply that it would be possible to give an exhaustive classification of all possible actions (just as one could list all possible outcomes of a game of roulette or all possible locations of a physical body in space). For without a complete enumeration of all possible types of actions there can be no knowledge of their relative frequencies. Obviously, no such list of all possible human actions exists, however. We know of a great number of types of action performed then or now, but this list is always open and incomplete. Indeed, actions are designed to alter the natural course of events in order to bring about something as yet non-existent. They are the result of creative imagination. New and different actions are

[6]See Ludwig Lachmann, *The Market as an Economic Process* (Oxford: Basil Blackwell, 1986), chap. 2, esp. pp. 27–29; also Gerald P. O'Driscoll, Jr., and Mario J. Rizzo, *The Economics of Time and Ignorance* (Oxford: Basil Blackwell, 1985), chap. 2, esp. pp. 24–26.

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constantly added to the list, and old ones dropped. For instance, new or different products and services are constantly added to the pre-existing list of products and services, while others disappear from the list. However, something as yet non-existent—a new product—cannot appear on any list until after it has been imagined and produced by someone. Even the producer of a new product X does not know—and could not have predicted—anything regarding the relative frequency of actions such as the supply of or the demand for X before he had actually had the new idea of X—yet any new product idea and any new product must necessarily upset (alter) the entire pre-existing pattern of the relative frequency of various forms of action (and of relative prices).

Moreover, if we could indeed predict our future actions, either perfectly or subject only to random errors, then it would have to be implicitly assumed as well that every actor must possess the same (identical) knowledge as everyone else. I must know what you know, and you must know what I know. Otherwise, if our knowledge were somehow different, it would be impossible that both our predictions could be equally correct or else equally correctly wrong. Instead, either my predictions would have to be correct and yours would have to be wrong, or vice versa, and either my predictions or yours then would have to be wrongly wrong. The error (mine or yours) would not be random but systematic, for it could have been avoided had I (or you) known what you (or I) knew. This precisely is the case, however: our knowledge is not identical. You and I may know some things in common, but I also know things (about myself, for instance) that you do not know, and vice versa. Our knowledge, and hence our predictions and expectations concerning future actions, are in fact different. Yet if different actors possess different knowledge, the likelihood (frequency) of their predicting correctly or incorrectly will be different as well. Hence, neither the success nor the failure of our predictions can be considered purely random but will have to be ascribed instead, at least partially, to a person's more-and-better or less-and-worse individual knowledge.

Most importantly, however, the rational expectations' model of man as a machine which is endowed with perfect knowledge of the relative frequency distribution of all of its possible future classes of actions (but that knows nothing about any particular action falling into any one of these classes except that it is a member of such and such a class and that this class of action has such and such a relative frequency) is fraught with inescapable internal contradictions. On the one hand, as far as the assumption that all actors possess identical knowledge is concerned, any proponent of this view is caught in a performative contradiction: his words are belied by the very fact of uttering them. For there would be no need to say what he is saying if everyone else already knew what he knows. Indeed, if everyone's knowledge were

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identical to everyone else's, no one would have to communicate at all. That men *do* communicate demonstrates that they must assume instead, contrary to the stated assumption, that their knowledge is not identical. Rational expectations theorists, too, by virtue of presenting their ideas to the reading public, must obviously assume that the public does not yet know what *they* already know, and hence, that the public's predictions concerning the future course of actions—in contrast to their own predictions—will be systematically flawed until it has successfully absorbed the lesson of rational expectations.

Similarly, anyone proposing the assumption of a given list of all possible forms of human actions, with its implied denial of all learning, is caught up in contradictions. For one, if his knowledge was indeed given, this would imply assuming that he already knows everything that he will ever know (otherwise, if he could learn something tomorrow that is not already known today, his list of possible classes of actions could no longer be assumed to be complete). Yet if this were the case, then inevitably the question arises how he ever came to know *this*. If he cannot learn, it would appear that he also could not possibly have *learned* to know that there is no human learning. Rather, this knowledge must have always been there, as part of his initial natural endowment, like his hands and fingers. But this idea—that our knowledge is given as our hands and fingers are given—is absurd. Knowledge is always the knowledge *of* something: the knowledge of hands and fingers, for instance, and it cannot possibly be conceived of as anything but sequentially (in time) *acquired* knowledge (as something based upon and learned about some logically and temporarily prior facts). Moreover, the denial of the possibility of learning is again belied by the proponent's action. In proposing his thesis, he cannot but assume that others can understand and possibly learn from him something that they do not yet know. And in waiting for and listening to the response of others to his proposition—by engaging in any form of argumentation—he cannot but also assume that he himself can possibly learn from what others have to say. Otherwise, if he already knew what they would respond and how he would respond to their responses, and so on, there would simply be no purpose to the whole enterprise of communication and argumentation. Indeed, if he knew in advance all of his arguments (propositions) and all possible replies and counterreplies (or at least their relative frequency distribution), it would also be senseless to even engage in any form of internal, intra-personal argumentation, because his knowledge would already be complete, and he would already possess the answers to all questions. Of course, the rational expectation theorists do engage in argumentation—and no one could argue that he cannot argue without thereby falling into a contradiction—and they do conduct research (which no one would do if he already knew everything there is to know). Hence, they demonstrate through

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their own actions that their model of man must be considered systematically flawed, and that man must think of himself as capable of learning something as yet unknown (unpredictable).

VI

What are the consequences as regards the nature of the social sciences that follow from the recognition of man as a learning actor? It is in the answer to this question that Knight and Mises on the one hand, and Lachmann on the other, ultimately part company. They would agree only on one consequence: that there exists a categorical difference between the logic of the natural sciences and that of the social sciences. Indeed, it follows from the recognition of man as a learning actor that the (still) dominating positivist (or falsificationist) philosophy, which assumes that all (empirical) sciences follow the same method—a uniform logic of science—is self-contradictory.[7]

It is one thing to predict the physical outcomes resulting from a given action (technology) or to predict the future pattern of a given class of natural events outside an actor's physical control (insurance). It is an entirely different matter to predict what action an actor will actually perform or against which classes of natural events he will actually want to insure himself. As far as the former problem is concerned, there is no need to dispute what positivism has to say: An actor wants to produce a certain physical result and he has an idea about what type of interference of his is capable of bringing about such a change. His idea is a hypothetical one. The actor never can be ultimately certain that his action will lead to the desired result. He can only try and see what happens. If his action is successful and the anticipated outcome is achieved, his idea is confirmed. However, even then the actor cannot be sure that the same interference will always bring about the same result. All that a confirmation adds to his previous knowledge is the certitude that his hypothesis so far has not yet been shown to be faulty. On the other hand, if his action fails, his idea is falsified and a new, revised or amended hypothesis will have to be formed. Thus, even if certainty is out of human reach, it is still possible, through a process of trial and error, that an actor may continuously improve his technological know-how. Likewise, as regards natural events outside one's control, insofar as an actor is not indifferent (unconcerned) about such events but prefers the presence of any such event over its absence, or vice versa, he may form an idea concerning the relative frequency distribution of the entire class of the particular event in question. This idea, based

[7]See Hans-Hermann Hoppe, *Kritik der kausalwissenschaftlichen Sozialforschung* (Opladen: Westdeutscher Verlag, 1983); idem, *The Economics and Ethics of Private Property* (Boston: Kluwer, 1993), chap. 7.

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as it is on the joint classification of singular events and the observation of long-run frequencies, is hypothetical, too. In this case, however, the occurrence of a single favorable or unfavorable event does not constitute a confirmation or a falsification of one's hypothesis. Rather, because the hypothesis refers to an entire class of favorable or unfavorable events and does not state anything regarding any singular event except that it is a member of this class, the question whether or not the course of future events confirms or falsifies one's idea can only be decided based on the observation of a large number of cases. This fact, although seemingly less than completely satisfying, does not imply that the experiences of confirmation and falsification, of success and failure, and of scientific progress proceeding through trial and error are any less real, however. In this case, whether or not one's hypothesis is confirmed or falsified can be decided based on the 'hard' and objective fact that an insurer—whether a single individual who insures himself over time through personal savings or an agency that insures a class of individuals across time against payment of a premium—either has, or has not, saved or collected premiums sufficient to cover the cost resulting from the occurrence of each and all unfavorable singular events. If he has, his hypothesis is temporarily confirmed, and if he has not, his hypothesis is falsified, and he will either have to change his frequency estimate and increase his savings or premiums, or he will have to revise his classification of singular events and introduce a new, further differentiated-system of classes and subclasses. Thus, even if certainty is again unattainable, continuous scientific progress is possible also with respect to man's ability to forecast accidents (natural events outside of his control).

Granted that this is so, however, the question arises if it is also true, as positivists maintain, that man can be thought of as following the same logic—of hypothetical conjecture, confirmation or falsification, and of scientific progress proceeding through a process of trial and error—when it comes to the problem of predicting his own future actions. But this must be categorically denied. For in proceeding in the way he does regarding the world of physical events inside or outside his control, an actor must necessarily conceive of himself as capable of learning (otherwise, why conduct any research at all?). Yet if man can learn and possibly improve his predictive mastery over nature, it must be assumed that he can not only alter his knowledge, and hence his actions, in the course of time, but also that these possible changes must be regarded by him as in principle unpredictable (such that any progress in his ability to predict these changes must be considered systematically impossible). Or putting things somewhat differently, if man proceeds, as positivists say he does, to interpret a predictive success as a confirmation of his hypothesis such that he would, given the same circumstance, employ the same knowledge in the future, and if he interprets a predictive failure

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as a falsification such that he would not employ the same but a different hypothesis in the future, he can only do so if he assumes—even if only implicitly—that the behavior of the objects under consideration does not change over the course of time. Otherwise, if their behavior were not assumed to be time-invariant—if the same objects were to behave sometimes this way and at other times in a different way—no conclusion as to what to make of a predictive success or failure would follow. A success would not imply that one's hypothesis had been temporarily confirmed, and hence, that the same knowledge should be employed again in the future. Nor would any predictive failure imply that one should *not* employ the same hypothesis again under the same circumstances. But this assumption—that the objects of one's research do not alter their behavior in the course of time—*cannot* be made with respect to the very subject engaging in research without thereby falling into a self-contradiction. For in interpreting his successful predictions as confirmations and his failed predictions as falsifications, the researcher must necessarily assume *himself* to be a learning subject—someone who can learn about the behavior of objects conceived by him as non-learning objects. Thus, even if everything else may be assumed to have a constant nature, the researcher cannot make the same assumption with respect to himself. *He* must be a different person after each confirmation or falsification than he was before, and it is then *his* nature to be able to change his personality over the course of time.[8]

But if the positivist-falsificationist view of a uniform logic of science is rejected and the logic of the social sciences considered categorically different from that applying to the natural sciences, as Knight, Mises, and Lachmann would agree, then what is the method appropriate for the study of human action? It is here that Knight and Mises would fundamentally disagree with Lachmann. Knight and Mises argue—correctly, as will be seen—that it does not follow from the recognition of man as a learning actor that everything concerning the future of human actions must be considered unknowable—indeed, they would consider such a view self-contradictory—but rather only that one must admit the existence of two categorically-different branches within the social sciences: of *apodictic* (*aprioristic*) theory (economics) on the one hand and of history and

[8]Likewise, it would be self-contradictory for me to state about my actions performed over the course of time what would have to be assumed if I wanted to consider them instances of insurable events (class probability): that I know nothing about any one of my actions except that they are *my* actions (in the same way as one may legitimately say, for instance, that I know nothing about any singular outcome of a game of roulette except that each one is the outcome of the same roulette). In fact, I do know more about each of them. I know that each action is influenced by my knowledge, and that my knowledge will be changed dependent on the outcome of each action, such that each action will be performed by a *different me* and must be considered a *unique* event (forming an entire class by itself).

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entrepreneurship on the other.[9] Lachmann and his followers conclude precisely this: (1) that there can be no such thing as economic theory capable of prediction at all, that all of the social sciences are nothing but history and "economists must confine their generalizations to the knowable past"[10]; and (2), that all of our predictions concerning human actions, which we must venture day in and day out, are nothing but haphazard guesses, that "man in his true humanity," as Lachmann approvingly cites Shackle, "can neither predict nor be predicted."[11]

VII

Regarding the first of Lachmann's two contentions—the impossibility of economic theory—it should be noted from the outset that this thesis—contrary to Lachmann's own claim, and in particular the self-congratulatory attitude found among some of his younger disciples—is anything but new and original, but represents instead a return to Lachmann's intellectual beginnings as a student of Werner Sombart and the "historicist" teachings of the German *Kathedersozialisten* (and thus most definitely has nothing whatsoever to do with Austrian Economics).[12]

Ludwig von Mises, the twentieth century's foremost Austrian economist and life-long critic of historicism, has thus characterized its doctrine: "The fundamental thesis of historicism is the proposition that . . . there is no knowledge but that provided by history. . . . The honest historicist would have to say: Nothing can be asserted about the future. Nobody can know how a definite policy will work in the future. All we believe to know is how similar policies worked in the past. Provided all relevant conditions remain unchanged, we may expect that the future effects will not widely differ from those of the past. But we do not know whether or not these relevant conditions will remain unchanged. Hence we cannot make any prognostication about the—necessarily future—effects of any measure considered. We are dealing with the history of the past, not with the history of the future."[13] That this is also an accurate description of Lachmann's position is made perfectly clear by Lachmann's following comment on the so-called Austrian theory of the trade cycle: "Here we have a body of analytical thought designed to meet the requirements set out above: to depict a recurrent pattern

[9] On the methodological views of Frank Knight in particular, see his *The Ethics of Competition and Other Essays* (New York: Harper Bros., 1935), and, idem, *On the History and Method of Economics* (Chicago: University of Chicago Press, 1956).

[10] Lachmann, *The Market as an Economic Process*, p. 32.

[11] Ibid., quoted in G.L.S. Shackle, *Time in Economics* (Amsterdam: North Holland, 1958), p. 105.

[12] Austrians from Carl Menger onward considered the German historicists as anti-economists and their intellectual foes. The historicists, in particular their leader Gustav Schmoller and his successor Werner Sombart, amply reciprocated this animosity.

[13] Mises, *Theory and History*, pp. 199, 203–4.

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of events with booms and depressions following each other in ceaseless succession. But can we really believe that agents witnessing these events will learn nothing from them and act in successive cycles in identical fashion? Is it not more likely that their action in each cycle will be affected by the lessons they have learnt from its predecessors, even though, as always happens, different people learn different lessons from the same events? Once we admit that people learn from experience, the cycle cannot be reproduced time after time. These considerations suggest that it may be better to give up the doubtful quest for a model of *the* business cycle and to regard phenomena such as cyclical fluctuations in output and prices simply as phenomena of history in the explanation of which changes in human knowledge will naturally play a part, with the events of each successive cycle requiring different, although often enough similar, explanations."[14]

While in and of itself this does not yet prove Lachmann wrong, it is a first step in the direction of a rigorous refutation that the position taken by Lachmann involves nothing less than an all-out social relativism—indeed: nihilism—that cannot but immediately strike one as entirely counter-intuitive. The relativistic consequences of historicism are hinted at clearly in the just quoted passage from Mises, while they may appear somewhat obscured by Lachmann in restricting his remarks to but one theory, the theory of the trade cycle (incidentally without bothering to explain, even if only briefly, what the theory actually states). However, there can be no doubt whatsoever that the trade cycle theory is cited by Lachmann as an *example* and that he actually believes his argument to be equally applicable to all other economic theorems. In the same way and for the same reason that there can be no such thing as *the* theory of the trade cycle, according to Lachmann, there also can be no such thing as *the* theory of exchange, *the* theory of prices, *the* theory of money, *the* theory of interest, *the* theory of wages, *the* theory of socialism, *the* theory of taxation, *the* theory of wage and price controls, or *the* theory of interventionism. What holds for the phenomenon of cyclical fluctuations supposedly also holds for all other phenomena: that they must be regarded as phenomena of history in the explanation of which changes in human knowledge will naturally play a part, with each successive exchange, price, use of money, interest, wage, socialism, tax, wage and price control, and government intervention requiring different, although often enough similar, explanations. But can we really believe *this*? Can we really believe, as Lachmann does, that we cannot say anything "applying equally to future and past" exchanges, prices, monies, or taxes? Can we really believe that, due to the possibility of learning, it may no longer be true in the future that every voluntary exchange will—*ex ante*—be

[14]Lachmann, *The Market as an Economic Process*, pp. 30–31.

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beneficial to both exchangers, and that every coercive exchange such as a tax will benefit one (the taxman) at the expense of the other (the taxed)? Can we really believe that each successive socialist experiment requires a different explanation, and that it is impossible to say anything applicable to *each and every* form of socialism, so that as long as there exists no private ownership of the means of production, and hence no factor prices, economic calculation (cost-accounting) will be impossible and permanent misallocation (waste) will have to result? Can we really believe that, *as long as socialism is not actually abolished*, this proposition may no longer hold true, because agents can learn from experience and may no longer act in an identical fashion? Can we really believe that if a central bank were to double the paper money supply overnight, this would not, now and forever, lead to a drop in the purchasing power of money as well as a systematic income redistribution in favor of the central bank and the early receivers of the newly-created money at the expense of those receiving it later or not at all? Can we really believe that if the minimum wage were fixed today at one million dollars per hour and if this decree were strictly enforced and no increase in the money supply were to take place, this measure might not lead to mass unemployment and a breakdown of the division of labor because people can learn from experience? To be sure, *Lachmann* believes all of this, and it is easy to understand why some other people—taxmen, socialists, central bankers, and minimum wage legislators—would like us to believe as he does. But it is difficult to imagine how anyone but Lachmann—including even those who would personally benefit from us believing that the future effects of various policies can never be known in advance—can actually consider any of this seriously.

As already indicated in section II above, the fundamental logical error involved in Lachmann's reasoning consists in the fact that it does not follow from the proposition that human actors face an uncertain future that everything regarding our future must be considered uncertain.[15] Nor does it follow from the fact that humans can learn, and hence their actions may change in the course of time, that everything concerning the future of human actions may possibly change in the course of time. Quite to the contrary. To draw these conclusions, as Lachmann does, is self-contradictory, for evidently, Lachmann claims to know for certain the unknowability of future knowledge and, by logical extension, of actions. Yet then he does know something about future knowledge and action. He must assume to know something about knowledge and action as such. Likewise, in claiming to know that humans are capable of learning and altering their actions in accordance with what they may learn, Lachmann must admit knowing something about man as such.

[15]See also Hoppe, *Kritik der kausalwissenschaftlichen Sozialforschung*, chap. 3, esp. p. 47.

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He must assume to know not only that man may change his future behavior, but also that these changes are the result of a process of *learning*; that is, that they are the result of man being able to distinguish between success and failure, between confirmation and falsification, and draw *conclusions* dependent upon such categorically distinct experiences; and hence, that all possible changes in the behavior of man, unpredictable as their specific content may be, follow a predictable pattern—a uniform and constant logic of human action and learning. To use a perfect analogy, while it is true that I am unable to predict *everything* that I will say or write in the future, this does not imply that I cannot predict *anything* about my future speaking and writing. I can predict, and indeed I can predict with perfect certainty, and regardless of whether I will speak or write in English or German, that, as long as I will speak or write at all, in any language whatsoever, all of my speaking and writing will have a constant and invariable logical (propositional) structure: that I must use identifying expressions, such as proper names, and predicators to assert or deny some specific property of the identified or named object, for instance.[16] In the same way it holds that even though I cannot predict what goals I may pursue in the future, what means I will deem appropriate to reach these goals, and what other conceivable courses of action I will choose to reject in order to do what I will actually do (my opportunity cost), I can still predict that as long as I act at all, there will be goals, means, choices, and costs; that is, I can predict the general, logical structure of each and every one of my actions, whether past, present or future. And this is precisely what economic theory or, as Mises has termed it, *praxeology*, is all about: providing knowledge regarding actions as such and knowledge about the structure which any future knowledge and learning must have by virtue of the fact that it invariably must be the knowledge and learning of actors.

To be sure, the knowledge of the invariant logical structure of acting and learning is acquired knowledge, too, as is all human knowledge. Man is not endowed with it. However, once learned, the knowledge conveyed by praxeology as well as that conveyed by propositional logic can be recognized as necessarily true—*a priori* valid—knowledge, such that no future learning from experience could possibly falsify it. While all of my knowledge regarding the external world

[16]See Paul Lorenzen, *Normative Logic and Ethics* (Mannheim: Bibliographisches Institut, 1969), chap. 1. Lorenzen explains (p. 16): "I call a usage a convention if I know of another usage which I could accept instead. . . . However, I do not know of another behavior which could replace the use of elementary sentences. If I did not accept proper names and predicators, I would not know how to speak at all. . . . Each proper name is a convention, . . . but to use proper names at all is not a convention: it is a unique pattern of linguistic behavior. Therefore, I am going to call it 'logical'. The same is true with predicators. Each predicator is a convention. This is shown by the existence of more than one natural language. But all languages use predicators." See also Wilhelm Kamlah and Paul Lorenzen, *Logische Propaedeutik* (Mannheim: Bibliographisches Institut, 1968), chap. 1.

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is, and forever will be tainted by uncertainty (it is not inconceivable that the law of gravitation may no longer hold in the future or that the sun will not rise tomorrow), my knowledge concerning the structure of my future action and learning is and forever will be non-hypothetically true: it is inconceivable that, as long as I am alive, I will not act and reach or not reach my goal and revise or not revise my knowledge depending on the outcome of my actions. Learning is the learning from success and failure, and there can be no learning of the fact that there is no success or failure. Thus, writes Mises, "man as he exists on this planet in the present period of cosmic history may one day disappear. But as long as there are beings of the species Homo sapiens there will be human action of the categorical kind praxeology deals with. In this restricted sense praxeology provides exact knowledge of future conditions. . . . The predictions of praxeology are, within their range of applicability, absolutely certain."[17]

How is it possible, then, especially in light of the fact that Lachmann was familiar with Mises and his writings, that he could have committed an elementary logical blunder such as not to recognize that it does not follow from the fact that we are capable of learning that *everything* about the future of human actions is unknowable? How could he not recognize that only those aspects of our actions which may actually be affected by learning can be considered unpredictable, while those aspects that are a necessary part of any action and learning and thus cannot be altered by future learning—the underlying logical structure of action and learning itself—cannot? The answer to this riddle lies in the fact that although he considered himself a staunch opponent of the positivist philosophy, Lachmann still fell prey to one of its fundamental misconceptions. Like Friedrich A. Hayek, his second teacher, Lachmann, whether wittingly or not, accepted the view of Hayek's friend and protégé Karl R. Popper that all scientific knowledge must be such that, in principle, it is falsifiable by experience, and that all knowledge that is not falsifiable is not genuine knowledge at all but represents merely empirically empty tautologies, i.e., arbitrary definitions (formalisms). It is thus that Lachmann can write in response to the challenge posed to his thesis of an unknowable future by Mises and his idea of a logic of action that "precisely by virtue of the logical necessity inherent in it, it is impotent to engender empirical generalizations. Its truth is purely abstract and formal truth. The means and ends it connects are abstract entities. In the real world the concrete means used and ends sought are ever-changing as knowledge changes and what seemed worthwhile yesterday no longer seems so today. We appeal in vain to the

[17]Ludwig von Mises, *The Ultimate Foundation of Economic Science* (Kansas City: Sheed Andrews and McMeel, 1978), pp. 84–85.

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logic of means and ends to provide us with support for empirical generalizations."[18]

But surely, as popular as this view of regarding all non-hypothetically true propositions—such as the laws of propositional logic, for instance—as empirically-empty formalisms has become in the wake of the rise of the positivist philosophy, it is completely fallacious.[19] In referring to highly-abstract entities such as objects and properties, rather than concrete ones such as my cactus and its red blossoms, I am still speaking about *real* phenomena. The term "tree" is more abstract than the term "pine tree," but the former has no less an empirical content than the latter. In the same vein, in saying something about ends, means, exchange, money, or interest—rather than about my desire to please my wife with flowers, a trade of two oranges against three apples, US dollars, or my exchange of two present socks for four socks three months hence—I am still stating something about real phenomena with an empirical content. Notes Mises, "if one accepts the terminology of logical positivism and especially also that of Popper, a theory or hypothesis is 'unscientific' if *in principle* it cannot be refuted by experience. Consequently, all *a priori* theories, including mathematics and praxeology, are 'unscientific.' This is merely a verbal quibble. No serious man wastes his time in discussing such a terminological question. Praxeology and economics will retain their paramount significance for human life and action however people may classify and describe them."[20]

In light of Lachmann's multiple logical errors, one can now turn back to our rhetorical questions raised in response to his claim of the impossibility of any and all economic theory and prediction. The reason it appeared absurd that one should be unable to predict anything regarding each and every voluntary exchange, tax, socialism, money supply increase, and minimum wage law, is that while man may learn many things and alter his behavior in many ways, he is unable to experience and

[18]Lachmann, *The Market as an Economic Process*, p. 31; for the similar views of Hayek see his "Economics and Knowledge," in Friedrich A. Hayek, *Individualism and Economic Order* (Chicago: University of Chicago Press, 1948).

[19]See Arthur Pap, *Semantics and Necessary Truth* (New Haven, Conn.: Yale University Press, 1958); Brand Blanshard, *Reason and Analysis* (LaSalle, Ill.: Open Court, 1962); Friedrich Kambartel, *Erfahrung und Struktur* (Frankfurt/M.: Suhrkamp, 1968); Hoppe, *The Economics and Ethics of Private Property*, chap. 6.

[20]Mises, *The Ultimate Foundation of Economic Science*, p. 70. Equally incomprehensible as the charge that praxeology is empirically empty because its propositions are non-falsifiable is the charge brought against Mises and Menger by O'Driscoll and Rizzo (*The Economics of Time and Ignorance*, p. 23), that the belief in the existence of "apodictic praxeological theorems" and "exact economic laws" implies the assumption of some sort of "rigid determinism!" And would one also have to give up the belief in the existence of universal and unchanging laws of logic if one were to adopt O'Driscoll's and Rizzo's indeterministic "dynamic subjectivism"?

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learn anything that is at variance with the laws of logic and the nature of man as an actor. I may not be able to predict that I will engage in voluntary exchanges, when, what it is that will be exchanged, or the exchange ratio at which the goods or services in question will be traded, etc., because all of this may indeed be affected by my and others' knowledge and change as this knowledge changes. But I can predict with perfect certitude that *if* a voluntary exchange takes place, regardless of where, when, what, and at what exchange ratio, both exchange partners must have had opposite preference orderings and must have expected to benefit from the exchange. No possible learning can ever change *this*. Likewise, I may not be able to predict that or when a socialist experiment will be undertaken or discontinued. Nor will I ever be able to predict such an experiment's many specific features. All of this may be affected by learning. But regardless of whatever people may learn and how their learning may shape the peculiar shape of socialism, I can still predict with absolute certainty that as long as one is in fact dealing with *socialism*, any and all economic calculation will be impossible and permanent misallocations of production factors must result because *this* consequence is already logically implied in what socialism *is*. Similarly, I may not be able to forecast that a money will actually come into existence, and it is certainly possible that mankind may one day revert back to barter. Nor can I predict with certainty what specific *kind* of money will be employed in the future. But I can predict with perfect certitude that if there is any money in use at all, an increase in its supply must lead to a reduction in its purchasing power below what it otherwise would have been. This follows simply from the definition of money as a *medium of exchange*. Lastly, Lachmann also errs regarding the example of the Austrian theory of the trade cycle. He claims that due to the fact that businessmen can learn—they may hear of or read about Mises's theory—they may possibly alter their future behavior in such a way that the effects predicted by the theory will no longer ensue.[21] But such a claim simply involves a misunderstanding of what the theory actually states. True enough, people can learn from Mises, and this may actually prevent business cycles from occurring at all, just as people may learn from Mises never to engage in a socialist experiment in the first place. However, this is entirely beside the point, for the theory states that *if* a bank creates additional paper-money credit, above and beyond the credit made available by the public's voluntary savings, and *if* this additional credit is in fact placed into the hands of borrowers and the interest rate is thus lowered below what it otherwise would have been, i.e., the natural rate of interest, then,

[21]Ludwig Lachmann, "The Role of Expectations in Economics as a Social Science," in idem, *Capital, Expectations, and the Market Process* (Kansas City: Sheed Andrews and McMeel, 1977).

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and only then, will there be first a boom—over-investment—and consequently a bust—the systematic liquidation of some of the investments as malinvestment. Whatever businessmen may learn after a credit expansion has actually taken place cannot possibly affect this predicted outcome in the slightest, because an intertemporal discoordination is already logically implied in the stated premises. And if the if-clause is not fulfilled, then the theory of the trade cycle is not refuted, of course. It simply does not apply.[22]

VIII

Having rejected Lachmann's first contention of the impossibility of economic theory applicable to past and future alike, and having argued the case of Knight's and in particular Mises's instead, not only of the possibility of such theory but, even more strongly, of *a priori* theory and *apodictic* (non-hypothetical) prediction, in this final section Lachmann's second contention—the "kaleidic" nature of the social world and the haphazardous character of entrepreneurial prediction—will have to be examined.

Even if the existence of a logic of action—praxeology—is admitted, as it must be, it does not follow that the knowledge provided by it can render our future certain. Praxeology allows us to predict with certainty *some* future events and aspects of the world of human actions, but its range of applicability is strictly limited. There are many events and aspects, and indeed far more of far greater practical significance, about which praxeology has nothing to say. As Mises explains, "there is, but for Robinson Crusoe before he met his man Friday, no action that could be planned or executed without paying full attention to what the actor's fellow men will do. Action implies understanding other men's reactions."[23] "The task with which acting man, that is, everybody, is faced in all relations with his fellows does not refer to the past; it refers to the future. To know the future reactions of other people is the first task of acting man. . . . It is obvious that this knowledge which provides a man with the ability to anticipate to some degree other people's future attitudes is not *a priori* knowledge. The *a priori* discipline of human action, praxeology, does not deal with the actual content of value judgments; it deals only with the fact that men value and then act according to their valuations. What we know about the actual content of judgments of value can be derived only from experience."[24] Quite apart from

[22]See Ludwig von Mises, "'Elastic Expectations' and the Austrian Theory of the Trade Cycle," *Economica* 10 (1943): 251–52; also George Selgin, "Praxeology and Understanding," *Review of Austrian Economics* 2 (1988): 54.

[23]Mises, *The Ultimate Foundation of Economic Science*, p. 49.

[24]Mises, *Theory and History*, p. 311.

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whatever praxeology, technology, and insurance can possibly teach us about the future, then, Mises (as well as Knight) would agree with Lachmann that there remains as one of mankind's most pressing problems the need to predict our fellow men's concrete value judgments, the specific means they will choose to bring their valued ends about, and their evaluations once the results of their actions are in. And as has already been explained, they would also agree with Lachmann that because humans are capable of learning and their learning may affect their values, choices of means, and evaluations of outcomes, the positivist-falsificationist prescriptions of how to deal with this problem are logically inappropriate and impotent. But what else can we do? Or can nothing be done to deal with this aspect of uncertainty?

While it may appear that Lachmann's answer to these questions is similar to Mises's—both refer throughout their writings to the same group of philosophers of the *Geisteswissenschaften* and the social sciences, most notably Max Weber and Alfred Schuetz, and both mention the method of understanding (*Verstehen*)—this impression is mistaken (although due to Lachmann's generally less-than-clear writing and a considerable amount of hedging on his part, this issue is admittedly somewhat difficult to decide).[25] For whereas Mises's answer to the above questions is an unambiguous yes, there exists a method of dealing with the ineradicable uncertainty of future human choices, and even though this method is not, and never can be, perfect, by not availing ourselves of it we would rob ourselves of the very intellectual tool of successful action and encounter more frequent disappointments than otherwise would be the case. Lachmann seems to hold precisely this: that regardless of what we do, our successes or failures in predicting our fellow men's future actions are purely random.

As for Mises's position, it is essential to recognize that—and why—he rejects the view that the future of human actions may be considered random or haphazard. To entertain such a view can mean one of two things. It can mean that we know literally nothing. But this is clearly false, for we do know something: we know that the future events in question are human actions and will display the structure inherent in each and every action, and hence, that while our knowledge may be deficient, we are still in a position to say more than simply *ignoramus*.[26] Or it can mean that with regard to the problem of future human choices, we know everything about the behavior of the whole class of events, but we do not know anything about any singular choice except that it is an element of the entire class of human choices. The view that human actions may be regarded as instances of "class probability" has already been rejected above. We do not, and

[25]For a similar assessment see Selgin, "Praxeology and Understanding."

[26]See Mises, *Human Action*, p. 107.

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never will, know everything about the whole class of human actions. But from this it does not follow that we will have to confess complete ignorance regarding singular human choices (apart from the known fact that they are all choices). In fact, we do know something (more) about each singular event: we know that each singular event is the result of *individual* actors acting based on *individual* knowledge subject to changes by *individual* learning, such that each event as it unfolds in human history, past and future, must be conceived of as a *unique, and non-repeatable* event (with each event being in a class by itself); and we also know that in order to grasp the past or anticipate the future actions of our fellow men, we will have to pay attention and try to understand their individual knowledge, their individual values and personal know-how. It is thus that Mises characterizes the epistemological task faced by man in his dealings with his fellows as one of "case probability." "Case probability (or the specific understanding of the sciences of human action) . . . means: We know, with regard to a particular event, some of the factors which determine its outcome; but there are other determining factors about which we know nothing."[27] Categorically different as this situation of case probability is from that of class probability, it is hardly a situation in which the future is random or haphazard. Indeed, in some respect we are in a *better* (not worse) epistemological position in the field of human history, past and future, than we are in the field of natural events, of technology and insurance. For in the latter field we are categorically precluded from the possibility of understanding. Each singular event must be treated as a member of a class of *homogeneous*, except for their class membership *indistinguishable* singular events. In contrast, in the field of past and future human history, we are capable of distinguishing between every singular event (each event can be treated as *heterogeneous*); and to improve our grasp of the past, and our anticipations of the future actions of our fellows, we know and are capable of learning something about the *individual* causes—the *personal* knowledge—uniquely affecting the outcome of each and every *singular* human event (with each event deserving of its own special attention).

While neither random nor haphazard, then, the task of anticipating our fellows' actions based on an understanding of their individuality is not without its inescapable difficulties and imperfections, for every understanding of an individual is always an understanding of his *past* values and knowledge. However, as Mises was quoted above, our first task in life is to know the *future* reactions of

[27]Mises, *Human Action*, pp. 107–10. Ibid., p. 59, Mises notes, that "historical events have one common feature: they are human action. History comprehends them as human actions; it conceives their meaning by the instrumentality cognition and understands their meaning in looking at their individual and unique features. What counts for history is always the meaning of the men concerned: the meaning that they attach to the state of affairs they want to alter, the meaning they attach to their actions, and the meaning they attach to the effects produced by the actions.

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other people. "Knowledge of their past value judgments and actions, although indispensable, is only a means to this end."[28] Thus, in all of our attempts of anticipating the future, in addition to an understanding of the past actions of a given individual, we must also necessarily make a judgment regarding the relative stability or instability of the various parts of his system of values and knowledge as displayed in the past; that is, we must form an opinion about his *personality* or *character*. As Mises explains, we must "assume that, by and large, the future conduct of people will, other things being equal, not deviate without special reason from their past conduct, because we assume that what determined their past conduct will also determine their future conduct. However different we may know ourselves to be from other people, we try to guess how they will react to changes in their environment. Out of what we know about a man's past behavior, we construct a scheme about what we call his character. We assume that this character will not change if no special reasons interfere, and, going a step farther, we even try to foretell how definite changes in conditions will affect his reactions."[29] Likewise, if we are concerned about the future behavior of groups of individuals (rather than only a single one), we cannot but classify individuals according to the similarity or dissimilarity of their character or personality; that is, we cannot but form ideas of group characters—ideal types—and sort individuals according to their membership in such types. "If an ideal type refers to people," explains Mises, "it implies that in some respect these men are valuing and acting in a uniform or similar way. When it refers to institutions, it implies that these institutions are products of uniform or similar ways of valuing and acting or that they influence valuing and acting in a uniform or similar way."[30]

Our anticipations, based on an understanding of the past, and the construction of character and ideal types and the classification of individuals and groups into such types, are necessarily hypothetical, or rather, tentative predictions. In ascribing a certain character to an actor, we attempt to reduce the uncertainty surrounding his future behavior. We form a tentative judgment concerning more or less stable parts of his personality and predict that the future changes in his behavior, whatever they may be, will be changes in line with his character, i.e., changes which follow a general—predictable—pattern. Our prediction may turn out to be successful or not. We may have misclassified the actor(s). Or,

[28]Mises, *Theory and History*, p. 311.

[29]Mises, *The Ultimate Foundation of Economic Science*, pp. 49–50; and he continues then to say: "Compared with the seemingly absolute certainty provided by some of the natural sciences, these assumptions and all the conclusions derived from them appear as rather shaky; the postivists may ridicule them as unscientific. Yet they are the only available approach to the problems concerned and indispensable for any action to be accomplished in a social environment."

[30]Mises, *Theory and History*, p. 316.

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contrary to our judgment, the actor(s) may change their very character; and indeed, over the course of time some character types may die out and new ones may emerge, requiring the development of a different and changing system of classification. Or our character constructs may turn out too abstract or too specific; that is, even though they may yield correct predictions, we may find, in retrospect, that what they predict is of lesser importance than anticipated. The prediction may turn out to say too little of much importance, or too much of little importance, requiring further typological revisions. Moreover, whether we evaluate our predictions as successful or not, the meaning of success and failure is necessarily ambiguous. In the natural sciences, success means that so far your hypothesis has not been falsified; apply it again; and failure means that your hypothesis as it stands is wrong; change it. In our dealings with our fellow men, the implications are not, and never can be, as clear-cut. Maybe our prediction was wrong because some people, as can happen sometimes, acted out of character—in this case we would want to use our hypothesis again even though it had been apparently falsified. Or maybe our prediction was successful, but the individual in question has meanwhile undergone a change in his character—in this case we would not want to use our hypothesis again even though it had just been seemingly confirmed. Or maybe the actor in question knew our prediction and deliberately acted so as to confirm or falsify our hypothesis, in which case we might or might not want to change our future prediction. Every success and every failure, then, bears only inconclusive results and necessitates another tentative judgment, a new and updated understanding of the actors concerned and a renewed assessment of their characters in light of their most recent actions, and so on. Thus, in contrast to the situation in the natural sciences, where success and failure have an unambiguous meaning, where we are allowed to conclude that what was false in the past will also be so in the future and what worked once will likely work again, and where we may thus successively acquire a growing stock of knowledge, in dealing with the problem of anticipating our fellow men's actions, we can never rest on our past laurels but must always start again fresh and judge the applicability of our past knowledge anew, we can never possess a stock of knowledge that we may blindly rely upon in the future.

Nothing in this—Mises's—view regarding the nature of human history, past and future, is likely to strike anyone as new or revolutionary. Indeed, if it were not for the fact of the very different positivistic view of the matter, it would appear almost trivial and a self-evident truism. As Mises notes, "the methods of scientific inquiry [in the social sciences] are categorically not different from the procedures applied by everybody in his daily mundane comportment. They are merely more refined and as far as possible purified of inconsistencies and contradictions. Under-

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standing is not a method of procedure peculiar only to historians. It is practiced by infants as soon as they outgrow the merely vegetative stage of their first days and weeks. There is not conscious response of man to any stimuli that is not direct by understanding.[31] It is not entirely surprising, then, that Lachmann, too, while his methodological considerations (in distinct contrast to Mises's) are largely unsystematic and marred by an abundance of metaphorical expression and a lack of analytical rigor, should at times appear to be in essential agreement with this commonsensical view as embraced by Mises. Lachmann, too, makes frequent reference to understanding, ideal types, and institutions.[32] Yet despite such apparent similarities, Mises and Lachmann reach completely different conclusions as regards the nature of human—entrepreneurial—uncertainty. Whereas for Mises the result of the method of understanding is moderate uncertainty, for Lachmann it is radical uncertainty. How is this to be explained?

In putting the best possible—because it is the most consistent—face on Lachmann, the disagreement between his and Mises's position may be said to boil down to one regarding a contingent—empirical—fact. There is agreement on the method to be employed; there is disagreement only on how successful this method actually is—remarkably so and most of the time, as Mises would contend, or insignificantly and only occasionally so, as would Lachmann. Instead of disagreeing on principle, on methodology, they only disagree on a matter of fact: whether the social world is, in fact, kaleidic or not. But what of the facts, then? Although the empirical question of whether we inhabit a kaleidic world or not may appear to be of rather minor importance, given the fact that we must deal with it in any case and we have nothing but understanding available to us to do so, and although questions of this nature may easily degenerate into idle semantic quibbles such as whether a glass of water is half empty or half full, empirical questions—disagreements on matters of fact—are accessible to empirical research and can, in principle, be decided upon based on the observation of the facts. In the bright light of empirical facts, however, Lachmann's theory of radical uncertainty fares no better than in the pale light of logic.

So as to generate a radically-uncertain world of kaleidic change, Lachmann must assume, as a matter of empirical fact, that individual actors do not possess any such thing as a character. Understanding, as has been explained, is always understanding of past actions. In order to be able to successfully predict future actions based on an understanding of past actions, it is necessary that one assume that the past and the future are somehow related—not in the sense that the past

[31]Mises, *The Ultimate Foundation of Economic Science*, p. 48.
[32]See Lachmann, *The Market as an Economic Process*, pp. 34–42.

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would determine the future, but rather in the sense that the past values and know-how of an individual (which determined his past actions) shape and constrain his future values and know-how (which determine his future actions). Indeed, if this were not assumed to be the case and an individual's past values and actions were viewed as completely unrelated to his future values and actions, the study of history would be entirely useless. We only study an individual's past because we believe that this knowledge is valuable in helping us anticipate something regarding his future conduct. Without this belief, the study of history must be regarded as a sheer waste of time. In Mises's view, the link connecting an individual's past with his future and the empirical reason for our concern for the study of history is the existence of individual characters and personalities. It is the existence of a person's character, changing though it may be over the course of time, that assures the continuity of change: patterned social change instead of kaleidic flux. Accordingly, only if individual actors were assumed to be completely-disjointed personalities, such that my actions tomorrow were always entirely unrelated and unaffected by my actions today or yesterday, could Lachmann's scenario of radical uncertainty ever become reality. While this would indeed be a nightmare if it ever existed, it can safely be said that it has no resemblance whatsoever either to us or to the world we inhabit. Indeed, it is difficult to imagine how a world of disjointed personalities could be reconciled even with human *biology*. Solely on account of our physical bodily nature—which is a contingent fact, but as long as we are alive a relatively stable contingency—we cannot possibly be quite like Lachmann thinks we are, or else we would quickly die out.

As a matter of fact, actors, from the earliest stages of infancy on, display a personal character, they possess a personal identity and conceive of their past and future as forming a whole: their personal life history. We do not start building a house today and then, tomorrow, without any special reason, do something entirely unrelated. Rather, our past actions influence, circumscribe, and constrain our future actions. We do not always begin from scratch, but most of the time we continue what was already begun and planned as a part of a lengthy sequence of actions. And even if we abandon one such integrated plan, we typically adopt another one. Otherwise, if there were no such continuity in our actions, it would be impossible to explain one of the most striking features of human life—the existence and continued employment of a stock of capital goods. To produce a capital good is to begin something stretching into the future, and to employ an existing capital good is to continue something begun in the past. If the future were indeed unrelated to the past, it should be expected that capital goods, insofar as they come into existence at all, will just as quickly be abandoned in the future as they may have been adopted in the past. However,

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while there exist some ruins of abandoned capital goods, most of yesterday's capital goods are still employed today and tomorrow—which is empirical proof of the past's continuing influence on the future. As the author of a book on capital, Lachmann of all people should have been able to recognize this, and this alone should have given him reason enough to discard his thesis of kaleidic change and radical uncertainty.

Moreover, equally difficult for Lachmann to explain would be another fundamental feature of human history—the existence of enduring differences among various individuals in their ability to forecast the future; that is, not only the fact that I may be better able to predict the actions of A, B, and C, while you may be better able to predict those of D, E, and F, but also the fact that you and I, confronted with one and the same group of individuals G, H, and J, may display lastingly-different forecasting abilities. From Mises's view these facts pose no problem. Different individuals do not, and cannot possibly know (understand) everyone's past equally well. They know different individuals differently well, and accordingly, their forecasting ability should be expected to be different dependent on whose actions need to be predicted. Likewise, assuming that different individuals are concerned with forecasting the actions of the same individual or group of individuals, it should be expected that there will be systematically—and hence enduringly—different success rates among these forecasters. For in Mises's view, every prediction requires not only an understanding of the past but also a tentative judgment, influenced but not determined by the knowledge of the past, as to the underlying character structure of the individual actors concerned. As an essentially cognitive task involving different and complex intellectual operations, nothing should be less surprising than the fact that different individuals, with strikingly-different talents in all other areas of intellectual endeavor, will also perform differently when it comes to predicting their fellow men. However, if an individual's past and future were indeed unrelated, as Lachmann believes is the case, then everyone should be expected to predict everyone else's behavior equally well (or badly). A person with an understanding of an individual's past actions should not be able to predict his future actions any more successfully than someone else not so acquainted with the individual in question. Because the past is unconnected to the future, not knowing it cannot make a difference in our forecasting abilities. And since without our knowledge of past actions there is nothing left to go on to form a character judgment, we are all equally ignorant and without a rudder; hence, there also should be no lasting difference in our rate of success or failure. Successes and failures should be expected to be randomly distributed among actors and personal fortunes to dissipate as quickly as they are found.

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It is almost needless to say that none of this fits historical reality. Based on my long understanding of my wife, for instance, I can anticipate her actions and reactions in almost all foreseeable circumstances; and vice versa, she can predict me almost to perfection. There are few if any surprises, and probably no one else could predict us better than we can predict each other. Likewise, I can predict, with great precision and better than almost everybody else, the behavior of my children, while they have (still) considerably more difficulty understanding me and my character. Similarly, I can anticipate better than almost anybody else the actions and reactions of many of my family and friends under a great variety of circumstances, and they, knowing me, can successfully predict many or even most of my reactions. There is nothing radical or kaleidic about the uncertainty involved. As well, I know quite a bit about the history of men and women, Germans, Austrians, Turks, Americans, Italians, Mexicans, Protestants, Catholics, Jews, Blacks, Asians, university professors, politicians, businessmen, private and public employees, and so on, and in many respects I can predict the behavior of the members of these groups very successfully, and certainly more successfully than the average person. Moreover, as far as predictions about the behavior of one and the same (group of) individual(s) by different predictors are concerned, even if all predictors have equal access to the record of past events and can base their prediction on an understanding of this past, they are most definitely not equally successful in their predictions. Most importantly, in the narrower field of capitalist-entrepreneurship, where forecasters must estimate their present and current production costs and form a judgment regarding future consumer demand in order to successfully complete an anticipated exchange of present money against future money, and where there exists a set of objective criteria for success—profit and loss, continued operation and bankruptcy, and growth, stagnation, or decline of capital values—the degree of success among different individuals is strikingly different. While many of those who try fail and drop from the rank of a capitalist-entrepreneur to become involved in less risky and intellectually-demanding tasks, many others succeed to stay in business year after year, and some have succeeded in accumulating great fortunes during their life, and even to bring up heirs capable of preserving or enhancing their fortune beyond their own lifetime. This empirical fact, too, stands in open contradiction to the idea of kaleidic change and rather confirms the great cognitive value of the method of understanding (even more so in light of the fact that the superior predictive capability of the capitalist-entrepreneurs simultaneously reduces the uncertainty facing all of their employees by providing them with a present income even if they themselves could not have correctly anticipated the future demand for their own line of work).

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Certainly all of this—the predictive power of the method of understanding as manifested in the empirical facts of capital formation and maintenance, of successful everyday-life entrepreneurship (forecasting of family, friends, colleagues, and acquaintances), and of enduring business successes—in conjunction with the *apodictic* certitude provided by praxeology and the wide-ranging practical certainty afforded by technology and insurance should be more than sufficient to dispel all talk about radical uncertainty and kaleidic social change as either contradictory and meaningless or patently false.

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The Pareto Rule and Welfare Economics

Jeffrey M. Herbener

> It is [my] contention . . . that the wake for all welfare economics is premature, and that welfare economics can be reconstructed with the aid of the concept of demonstrated preference. This reconstruction, however, will have no resemblance to either of the "old" or "new" edifices that preceded it. In fact . . . our proposed resurrection of the patient may be considered by many as more unfortunate than his demise.[1]

When Murray N. Rothbard published his seminal article, "Toward a Reconstruction of Utility and Welfare Economics," these were bold words indeed, considering the disarray into which welfare economics had fallen by 1956.[2] The Old Welfare economics had crashed to the ground decades before when Lionel Robbins, building on the subjective-value foundation laid by Ludwig von Mises, demonstrated that its underpinning—interpersonal utility comparisons—was an impossibility.[3] Being subjective, utility has no cardinal index and, thus, no common cardinal units could possibly exist for the purpose of comparing the utility of different individuals. Since individual ordinal rankings of utility cannot be compared, the argument advanced by Pigouvian welfare theorists, that redistribution of wealth

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[1] Murray N. Rothbard, "Toward a Reconstruction of Utility and Welfare Economics," in Mary Sennholz, ed., *On Freedom and Free Enterprise: Essays in Honor of Ludwig von Mises* (Princeton, N.J.: D. Van Nostrand, 1956), p. 249.

[2] The importance of this article as a contribution to the Austrian literature can be seen in the assessment of Israel M. Kirzner, who said, "[I] can personally attest to the excitement engendered by the lucid manner in which this paper deployed Austrian insights to illuminate fundamental theoretical issues (concerning which contemporary economics was floundering), and by the characteristic erudition which Rothbard poured into that single essay." See Kirzner, "Welfare Economics: A Modern Austrian Perspective," in *Man, Economy, and Liberty: Essays in Honor of Murray N. Rothbard*, Walter Block and Llewellyn H. Rockwell, eds. (Auburn, Ala.: Ludwig von Mises Institute, 1988), p. 77.

[3] For the original contribution of Ludwig von Mises on the ordinal nature of utility, see Mises, *Theory of Money and Credit* (Indianapolis: Liberty Classics, [1912] 1980), pp. 51ff. For the blow delivered by Lionel Robbins to Old Welfare economics, see Robbins, *An Essay on the Nature and Significance of Economic Science*, 3rd ed. (New York: New York University Press, [1932] 1984), pp. 137–41.

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from the rich to the poor would increase social welfare because of diminishing marginal utility of money, fails. To the chagrin of advocates of Old Welfare redistributionist policies, economists conceded that the subjective nature of utility renders cardinal measurement, a necessary requisite of interpersonal utility comparisons, impossible.[4] Moreover, they admitted that advocates of such policies were not value-free economists but ethicists advancing their own, usually egalitarian, ethical biases.[5]

Paul Samuelson, a major architect of New Welfare economics, characterized the egalitarian desire typical of Old Welfare economists to equalize income as "a fetish or shibboleth, albeit a useful one, in that the means becomes the end, and the letter of the law takes precedence over the spirit." According to him, egalitarianism fails because "it is easy to show that the rule of equality of income . . . applied to individuals of different tastes . . . is actually inconsistent with any determinate, definite [social welfare] function"; a statement more revealing of the importance he placed on his social-welfare construct than of the genuine deficiencies of egalitarianism.[6] He also rejected Old Welfare economics for making the "essentially unnecessary assumption" that the social welfare function to be maximized was "the sum of the cardinal utilities experienced by each individual."[7]

Yet, Samuelson's cavalier attitude toward the demise of cardinal utility and consequent acceptance of ordinal utility did not result in a simple and quick

[4]In addition to cardinal units for each individual's utility, interpersonal utility comparisons require a *common* cardinal unit in which the utility units of different individuals could be expressed. Those familiar with Ludwig von Mises's argument that socialism is impossible because of the inability of central planners to make economic calculations will recognize a parallel between that argument and the impossibility of interpersonal utility comparisons. The impossibility of economic calculation in socialism rests on the absence of a common, cardinal unit in which different types of factors of production can be reckoned. See Mises, *Human Action: A Treatise on Economics*, 3rd rev. ed. (Chicago: Henry Regnery, [1949] 1966), pp. 206–9.

[5]Pigouvian Welfare Theory is developed in Arthur C. Pigou, *The Economics of Welfare* (London: Macmillan, 1920). For a discussion of the necessity of having ethical judgments taken from disciplines outside economic theory as the foundation of Old Welfare economics, see Lionel Robbins, "Interpersonal Comparisons of Utility: A Comment," *Economic Journal* 48 (December 1938): 635–41.

[6]Paul Samuelson, *Foundations of Economic Analysis* (Cambridge, Mass.: Harvard University Press, 1947), p. 225. He added analytic rigor to this line of argument in idem, "Social Indifference Curves," *Quarterly Journal of Economics* 70, no. 1 (February 1956): 8–14. He had less sympathy with "the bourgeois penchant for laissez-faire," which he claimed was "the only case on record where a substantial number of individuals have made idols of partial derivatives, i.e., imputed marginal productivities." That Samuelson rejected "the belief that the individual should rightfully receive his imputed productivities," because "[it] is not consistent with a [social welfare] function having properties" which he deems important reflects more on his own ethical biases than on a genuine ethical assessment of laissez faire. See, Samuelson, *Foundations*, p. 225. Oscar Lange, a New Welfare economist sympathetic to the egalitarian leanings of the Old Welfare school, demonstrated that the Pigouvian analysis can be recast in the New Welfare framework. See idem, "The Foundations of Welfare Economics," *Econometrica* 10 (1942): 221–23.

[7]Samuelson, *Foundations*, p. 226.

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solution to the problem of explaining the relationship between ordinal utility and the cardinal magnitudes in the social welfare function to be maximized. New Welfare economists struggled in vain for several decades to show how ordinal ranks relate to cardinal numbers and were useful for welfare analysis. One by one, they began to admit defeat and surrendered to the impossibility of interpersonal utility comparisons of ordinally-ranked utility.

Had they not been wedded to their mathematical formulations, perhaps they could have accepted the solution given by Mises. From his development of the concept of ordinal marginal utility in 1912 Mises went on to explain how *ordinal* utility can be the basis for socially-meaningful *cardinal* comparisons of value.[8] Money is a common denominator in which ordinal preferences can be expressed, by exchanges of private property for and against money, resulting in cardinal numbers, namely, money prices, which are in the same units, namely dollars, for all goods and factors traded on the market. The price for the existing stock of each consumer good reflects, but is not and cannot be equal to, the subjective value of its marginal unit, i.e., the unit with the least subjective value. The price for each factor is imputed to it by entrepreneurial demands to rent the factor, according to the objective value of the amount of the consumer good the factor produces at the margin, i.e., its marginal value product. This price will also reflect the subjective opportunity cost factor owners place on the marginal unit of the factor, including renting the factor into other production processes.[9]

As Mises showed, by transforming the ordinal preference ranks of different individuals, which are impossible to compare, into a quantity of common, cardinal units, the monetary, private property, market system provides the basis for economic calculation. Entrepreneurs use money prices to make calculations of profit and loss, and in so doing compare, in objective value, different factors of production against each other and one set of factors against others in producing each consumer good and each factor or set of factors in producing different consumer goods. That money prices, only possible in a monetary, private property, market system, provide a common cardinal unit in which different factors can be compared in social value is an essential part of Mises's economic calculation argument.[10] Moreover, entrepreneurial calculations of profit allow for cardinal comparisons of the social value of the consumer good produced (the total revenue generated by consumer purchases) with the social value of factors used (the total cost generated by entrepreneurial purchases). Any time an

[8]On ordinal marginal utility, see Mises, *Theory of Money and Credit*, pp. 59–61. His discussion of the relationship between ordinal utility and cardinal value is in *Economic Calculation in the Socialist Commonwealth* (Auburn, Ala.: Ludwig von Mises Institute, [1920] 1990), pp. 11–13, 23, and 48–49.

[9]On the pricing process, see Mises, *Human Action*, pp. 327–50.

[10]Ibid., pp. 206–9.

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entrepreneur earns profit, social wealth increases; any time he suffers a loss, social wealth decreases. It is within this general economic framework that Professor Rothbard developed Austrian welfare economics.[11]

By showing that the voluntary exchanges of private property using money transform ordinal ranks into cardinal numbers reflective of those ranks, Mises solved the theoretical problem that welfare theorists, both Old and New, would attempt, within their neoclassical framework, to solve in vain.[12]

Old Welfare theorists, such as Alfred Marshall, approached this problem in a superficially similar, but entirely unsatisfactory, manner. His consumer-surplus approach implicitly assumes that the marginal utility of a good equals a sum of money.[13] Thus, cardinal utility enters by the back door, the common cardinal unit for utility being a dollar. Writing of a consumer purchase, Marshall says, "the economic measure of . . . the *satisfaction* which he gets from its purchase" is "the excess of the price which he would be willing to pay rather than go without the thing, over that which he actually does pay."[14] Defining producer surplus in an analogous way (the excess of the price he receives over that which he would be willing to accept rather than forego the sale) allows one to add the money sums of consumer and producer surpluses, treating the aggregate, total surplus, as a measure of total utility. The total utility from the production and exchange of different goods can then be compared and policy directed toward the maximization of total surplus.

In addition to assuming cardinal utility this analysis makes the illegitimate assumption that the marginal utility of a dollar to everyone is the same since each dollar added into total surplus counts as one. It would seem, however, that if these objectionable features could be expunged, the analysis could be saved.[15]

Such a purification provides the theoretical justification for cost-benefit analysis. There is no need to assume anything about cardinal utility, proponents of this

[11]The connection between Misesian general economics and Rothbardian welfare economics will be explored below.

[12]This is an excellent illustration of the inferiority of a mathematical method *vis-à-vis* a verbal method in economic reasoning. Mathematics is inherently incapable of solving this basic economic problem which is easily handled using literary means. On mathematics and pricing, see Mises, *Human Action*, pp. 350–57, 701–3, 710–15.

[13]Marshall's discussion of consumer surplus is in *Principles of Economics* (New York: Macmillan, [1890] 1948), pp. 92–101, 124–37, and 831–32.

[14]Ibid., p. 124. Emphasis added.

[15]J.R. Hicks attempted to expunge cardinal utility from the surplus approach in a manner consistent with the New Welfare economics. See Hicks, "The Rehabilitation of Consumers' Surplus," *Review of Economic Studies* 8, no. 2 (1941): 108–16; idem, "Consumers' Surplus and Index Numbers," *Review of Economic Studies* 9, no. 2 (1942): 126–37; idem, "The Four Consumers' Surpluses," *Review of Economic Studies* 11, no. 1 (1943): 31–41; idem, and "The Generalized Theory of Consumers' Surplus," *Review of Economic Studies* 13, no. 2 (1945–46): 68–74.

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approach argue, if government officials can use the market in the same way that entrepreneurs do—as the basis for calculation of profit. When contemplating a government intervention, they can use existing market prices to project anticipated benefits and costs in sums of money. If the project renders net benefits then intervene, if not, social wealth would be greater without the intervention.

Cost-benefit analysis does not fail as a social-welfare technique for lack of a method for assessing the subject value of individuals in cardinal terms. It circumvents that problem by relying on the same market procedure that entrepreneurs do. Its fundamental error is in equating the *appraisal* that can be performed only by entrepreneurs in economic calculation with the superficially similar "paper" calculations made by government officials. Genuine appraisal of social values requires entrepreneurs to put their own wealth at risk in the process of production and exchange. Without this, there is no connection between existing market prices and the expectations of future prices upon which profit and loss will hinge. Government officials can only "play" market and, thus, cannot make genuine appraisals.[16]

Mises made this point in rebutting economists, in particular those following the approach of Enrico Barone, Oscar Lange, and Abba Lerner, who used the neoclassical apparatus of general equilibrium in attempted refutations of his economic calculation argument against socialism.[17] Barone and Lerner are cited as important forerunners of the New Welfare economics by its major architects, Abram Bergson and Paul Samuelson. Bergson's seminal article is dedicated to presenting "the value judgments required for the derivation of the conditions of maximum

[16]On this point, see Mises, *Human Action*, pp. 705–10. Moreover, both bureaucratic cost-benefit calculations and entrepreneurial appraisals require formulating expectations of the future. Bureaucratic expectations are categorically different than entrepreneurial ones because government officials do not place their own wealth at risk on the accuracy of their forecasts. And for those government projects for which there will be no future market, bureaucrats have less basis than entrepreneurs for formulating any type of expectations. On the differences between bureaucratic and entrepreneurial management, see Ludwig von Mises, *Bureaucracy* (Cedar Falls, Iowa.: Center for Futures Education, [1944] 1983).

[17]What came to be called the Lange–Lerner rule states that central planners can maximize social welfare by solving the perfectly-competitive, general-equilibrium equations to obtain "shadow" prices of all inputs and outputs, then make this list of prices known to the relevant consumers and producers, and finally instruct them to behave as if they were maximizing utility and profit in a perfectly-competitive economy. Enrico Barone, "The Ministry of Production in the Collectivist State," in *Collectivist Economic Planning*, F.A. Hayek, ed. (Clifton, N.J.: Augustus M. Kelley, [1935] 1975), pp. 245–90; this article was first published in Italian in 1908. Oscar Lange, "Mr. Lerner's Note on Socialist Economics," *Review of Economic Studies* 4 (October 1936): 143–44; and idem, "The Foundations of Welfare Economics," *Econometrica* (1942): 215–28. Abba Lerner, "Economic Theory and Socialist Economy," *Review of Economic Studies* 2 (October 1934): 51–61; and idem, "Theory and Practice in Socialist Economies," *Review of Economic Studies* 6, no. 1 (1938): 71–75. In refuting this approach, Mises specifically identifies Barone as failing to "penetrate to the core of the problem," *Human Action*, p. 701.

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economic welfare which have been advanced in the studies of . . . Pareto and Barone, and Mr. Lerner."[18] Samuelson calls Barone's article on optimizing social welfare "masterly," claiming that "it is a tribute to this work that a third of a century after it was written there is no better statement of the problem in the English language." Of Lerner, Samuelson says, "[He] developed the Paretian conditions which show that the marginal equivalences realized by perfect competition lead to an optimum of production and exchange."[19] Since the New Welfare economics emerged from the debate about economic calculation, it is not surprising to find Mises's arguments demonstrating the impossibility of economic calculation in socialism useful also in rebutting the New Welfare economics; nor is it surprising to find proponents of the New Welfare economics dedicated to demonstrating that the free market fails to maximize social welfare.[20]

It was left to Rothbard to reconstruct welfare economics upon Mises's foundation or, rather, within Misesian general economic theory. The crucial concept in that reconstruction is demonstrated preference, that, as he says, "a man's preferences . . . are deducible from what he has chosen in action."[21] That demonstrated preference is the operative concept in value-free, welfare economics is implied by the subjective nature of value. Because the value a person places on alternative ends is an intensive mental state, another person can say nothing about it unless it is revealed in action.[22] Moreover, modern price theories, both Austrian and neoclassical, presuppose demonstrated preference. In both

[18]Abram (Burk) Bergson, "A Reformulation of Certain Aspects of Welfare Economics," *Quarterly Journal of Economics* 70, no. 2 (February 1938): 310.

[19]Samuelson, *Foundations*, pp. 214–17.

[20]What is surprising is Samuelson's befuddlement that "Barone satisfies himself with deriving optimal *production* conditions" without bothering to extend his analysis to consumption conditions. He claims that this "oversight resulted from his wish to avoid the use of indifference curves and utility." Samuelson, *Foundations*, p. 217, emphasis in original. The absence of consumption optima, however, is no oversight at all for managing a *collectivist* regime of production. As Mises argued, socialism solves the problem of determining what consumer goods to produce by having the central planners use their own preferences. Mises, "Economic Calculation," pp. 23–24. Since Barone developed his framework of welfare theory to explain how to manage production in a collectivist state, it is not at all surprising that consumption optima were absent from his set of optimum conditions.

[21]Rothbard, "Toward a Reconstruction," p. 225. On the early development of the concept of demonstrated preference by Mises, see *Theory of Money and Credit*, p. 60; and idem, *Human Action*, pp. 94–96.

[22]To remain value-free economists, i.e., to abstain from injecting into economic theory ethical propositions, adherents of cardinal utility among the Old and New Welfare economists had to agree with the ordinalists that actions are necessary to demonstrate utility, e.g., consumer surplus is a monetary calculation of utility using a demand curve, which is the result of the actions of buyers in the market. Those cardinal-utility advocates who did not develop value-free theories were not bound by the demonstrated-preference principle, e.g., the Pigouvian prescription, driven by egalitarian ethical notions, of increasing social welfare by equalizing monetary incomes is founded on the undemonstrable principle that each person has a capacity for utility satisfaction identical to that of every other person.

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theories, price is determined by the actions of buying and selling that are prompted by subjective evaluations. The imaginary constructs of consumer surplus (from Old Welfare economics) and general equilibrium (from New Welfare economics) are built from the assumption of demonstrated preference. Thus, when adherents of Old or New Welfare economics discuss improving or maximizing social welfare, they are not referring to more general concepts of social "well-being." To be value-free, this is a necessary restriction on welfare economics. It is no defect of Austrian Welfare economics that it fails to encompass a broader concept of social "well-being." Value-free economic theory cannot do so.[23]

Acceptance of the subjective nature of value required economists to reject cardinal utility in favor of ordinal utility. The inability to make cardinal comparisons of the gain in utility to some with the loss in utility to others from a social interaction, in turn, forced them to "reintroduce Pareto's Unanimity Rule into economics, and establish it as the iron gate where welfare economics must test its credentials," as Rothbard puts it.[24] To increase social welfare, according to the Rule, a social interaction must benefit at least one person while harming no one. If so, the post-interaction state is called Pareto Superior to the pre-interaction state. Pareto Optimality exists when all Pareto-Superior changes have been exhausted.[25] Forced to accept the Pareto Rule and demonstrated preference, it would seem that economists could make pronouncements about the social welfare of voluntary exchanges, which necessarily demonstrably benefit each participant while doing no demonstrable harm to non-participants, but not involuntary exchanges (such as government intervention), which necessarily benefit some and harm others. Only a social system of unanimous consent can generate the greatest benefit for society; the free market is the "economic" component of such a social system.[26]

Non-socialist advocates of the New Welfare economics, far from being predisposed to provide a welfare justification for the free market, were anxious

[23]On this limitation of welfare theory, see David Gordon, "Toward a Deconstruction of Utility and Welfare Economics," *Review of Austrian Economics* 6, no. 2 (1993): 103–4. Gordon makes this point in response to a criticism of Professor Rothbard's welfare theory made by Roy Cordato, who argues that, "demonstrated preference . . . does not allow for any consideration of harm that is not demonstrated," which rules out "the welfare effects of envy, trauma, etc." Thus, voluntary exchanges "may have negative psychic effects on others," which negates the claim that such activity renders an "unambiguous increase in 'social utility.'" Cordato, *Welfare Economics and Externalities in an Open Ended Universe* (Boston: Kluwer Academic Publishers, 1992), pp. 42–43.

[24]Rothbard, "Toward a Reconstruction," p. 244.

[25]Vilfredo Pareto, *Manual of Political Economy* (New York: Augustus M. Kelley, [1927] 1971).

[26]Given the strictures of value-free economics, consent can only be inferred from voluntarily-undertaken actions by which preferences are demonstrated.

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to demonstrate the welfare superiority of interventionism.[27] Thus, they set themselves to circumventing this stricture of the Pareto Rule. Two approaches were attempted: trivialize the Rule by subsuming it into a general equilibrium framework and transcend the Rule with the compensation principle. The first attempt led to the development of the social welfare function and the concept of market failure, the second to the concept of potential compensation and political rules for defining consent.

Bergson pioneered the social welfare function approach.[28] This technique trivializes the Pareto Rule by making it the criterion of attaining the set of optimal conditions for maximizing the social welfare function. The social welfare function approach uses the Pareto Optimality interpretation of the Pareto Rule, demonstrating that the Rule merely describes the static, end-state condition necessary, but not sufficient, for maximum welfare. As such it provides no barrier at all to advocacy of government intervention to increase social welfare by redistributing income and correcting for market failure.

There are three optimum conditions derived using the Pareto Rule in this way.[29] The Exchange Optimum requires every individual to consume so that the Marginal Rate of Substitution (MRS) for each pair of goods, which is equal to the ratio of the goods' marginal utilities, be equal. If violated, then goods can be exchanged between individuals moving at least one to a higher indifference curve without moving anyone else to a lower indifference curve. The Factor Use Optimum requires each good to be produced so that the Marginal Rate of Technical Substitution (MRTS) for each pair of factors, which is equal to the ratio of the factors' marginal products, be equal. If not, factors could be rearranged to produce more of at least one good without reducing the production of any other good. The Production Optimum requires each good to be produced so that the Marginal Rate of Transformation (MRT) between each pair of goods be equal to the corresponding MRS. If unequal, production of the high-cost good could be reduced and that of the low-cost good increased; thereby moving at least one person to a higher indifference curve without moving any other to a lower indifference curve.

[27]The socialist proponents of the technique used by New Welfare economists were anxious to show by mathematical proof that central planning could operate a division of labor as efficiently as the market by solving the system of perfectly-competitive, general-equilibrium equations. For Mises's criticism of their attempts, see *Human Action*, pp. 701–3.

[28]Bergson, "A Reformulation of Certain Aspects of Welfare Economics": 310–34.

[29]Bergson's list of optimum conditions differs from the one presented here. For our purposes, the differences between this list, as developed and synthesized by later authors, and Bergson's is inconsequential. For a presentation of how the perfectly-competitive market achieves the optimum conditions, see Francis Bator, "The Simple Analytics of Welfare Maximization," *American Economic Review* 47, no. 1 (March 1957): 22–59.

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Achieving the Production Optimum ensures production along society's Production Possibilities Frontier (PPF), where any increase in production of one good necessarily reduces the production of another good. There are an infinite number of production combinations along the PPF. For each point on the PPF, the goods produced can be divided among individuals in an infinite variety of ways, each of which is Pareto optimal, i.e., no one can increase his utility without reducing the utility of someone else. Only one such consumption combination, however, has a MRS in consumption equal to the MRT in production. Thus, each of the infinite number of Pareto optimal production combinations along the PPF renders one Pareto optimal consumption combination. A Utility Possibility Frontier (UPF) can then be constructed showing the utility each individual acquires from each Pareto optimal consumption combination: along the UPF, any change in production or consumption that increases one person's utility must decrease another person's utility. To select the social-welfare maximum combination, a social welfare function having all the properties of an individual's utility function, e.g., smooth, continuous, convex indifference curves, is constructed. The socially-optimal point on the UPF is the one corresponding to the highest social-welfare indifference curve.

It would seem that a social welfare function, so constructed, must of necessity compare the utility of one person with that of another, which is precisely what the stricture laid down by the impossibility of interpersonal comparisons of utility prohibits. If so, the efforts of New Welfare economists to provide a complete, value-free, social welfare theory were in vain. Its proponents struggled mightily to avoid this conclusion. Samuelson made the most notable attempt by formulating a version of New Welfare economics based on his own interpretation of ordinal utility in which he followed Bergson.[30] But the lack of a cardinal index for utility by which interpersonal utility comparisons could be made, which he treats in a cavalier fashion in criticizing the Old Welfare economics, brought up short his attempts.

Samuelson postulates a social welfare function dependent upon the welfare each individual obtains from the amounts of all goods and services he receives. He then asserts that such a social welfare function is "only ordinally determinable" but can be subject to all mathematical operations (e.g., aggregation of individual utilities and differentiation) by assigning arbitrary cardinal numbers to each ordinal rank.[31]

[30]Samuelson calls Bergson "the first who understands the contributions of all previous contributors, and . . . the first to develop explicitly the notion of an *ordinal* social welfare function in terms of which all the various schools of thought can be interpreted" and claims that "there is only one all-inclusive welfare economics, which reaches its most complete formulation in the writings of Bergson." Samuelson, *Foundations*, pp. 219 and 249. Emphasis added.

[31]Ibid., pp. 228–29.

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The construction of Samuelson's social welfare function is illegitimate. To be an ordinal function consisting of ordinal utility ranks of individuals, the social welfare function must make interpersonal comparisons of utility in every case where one person's utility rank increases while another's decreases. Its existence presupposes interpersonal comparisons of utility. This problem is not circumvented by asserting that the social welfare function has a reduced form that depends only on the amount of each good going to each individual. Then the social welfare function must either compare the utility of different individuals for different distributions of income or it must ignore the utility of individuals and impose upon them the preferences of a dictator.[32]

Moreover, Samuelson's construction of the social welfare function on the analogy of the standard treatment of individual utility as an indifference map fails on the crucial point. He is in error when he claims that the problem of interpersonal utility comparisons can be circumvented by a social welfare function that "need only be ordinally defined" and then having done so assign to each social indifference curve an arbitrary cardinal number.[33] The possibility of circumventing the problem of interpersonal utility comparisons in the construction of an individual's utility map by building with ordinal ranks alone and then assigning cardinal numbers to each indifference curve exists only because the items being subjectively evaluated by the individual are goods (the dimensions of the graph are the amounts of the different goods). The individual must be able to compare his own utility for different combinations of goods. But the social welfare function must be able to compare the utility of different individuals (the dimensions of the graph are the utilities of different individuals) in order to construct the social indifference curves. To construct social indifference curves, one must presuppose cardinal utility and infinitesimal units of cardinal utility.

Additionally, whether individual or social, indifference curves either imply cardinal utility or forbid utility functions. Drawing a set of indifference curves with cardinal numbers assigned to them is mathematically equivalent to having a differentiable utility function. But any function that can be differentiated must be defined cardinally. One cannot differentiate a function of ordinal rankings. Thus, drawing a set of indifference curves without assigning cardinal numbers to them forbids a corresponding utility function. It is precisely the absence of such cardinal numbers that gives indifference curve analysis the appearance of being consistent with ordinal utility. That Samuelson knows this point full well is revealed by his attempt to claim the efficacy of arbitrary assignment of cardinal

[32]The latter possibility is examined in Samuelson, "Social Indifference Curves": 14–18.
[33]Samuelson, *Foundations*, p. 221.

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numbers instead of stating that cardinal numbers are simply not necessary for his theory. It does no good to claim to replace cardinal marginal utility with ordinal marginal rates of substitution if the analytic devise to do so, i.e., the utility function, mathematically implies the equivalence of the marginal rate of substitution of one good for another with the ratio of their marginal utilities. Yet, this is precisely what any utility function, individual or social, does. In the hands of its practitioners, indifference curve analysis is not a means of expunging cardinal utility from economic theory; it is a way of disguising its use.

The comment of Joseph Schumpeter on the measurability of utility, that "there is in fact no compelling necessity of insisting upon measurability so long as we are interested only in a maximum problem: there are means of telling whether or not we are on the top of a hill without measuring the elevation of the place where we stand," illustrates the fundamental misunderstanding of the problem posed to the social welfare function by ordinal utility.[34] If utility is ordinal, there is no hill; to construct the hill one must assume cardinal utility and a social welfare function that is continuous and differentiable. What would a "hill" of ordinal ranks look like? The reason the assertion works for a real hill is that it is continuous and differentiable; therefore it is possible to assign cardinal numbers, which one could plausibly maintain are arbitrary since there is no absolute unit of altitude, to the various elevations on the hill. While one could construct a "stair-step" from ordinal ranks of an individual from which one could plausibly find a maximum position, i.e., a highest rank, to do so for a social welfare function presupposes interpersonal utility comparisons.

Samuelson clearly understood that an ordinal social welfare function was useless within his mathematical framework since without cardinal numbers it could not be maximized in the standard calculus manner. Furthermore, he implied that his method of specifying arbitrary cardinal numbers to the social-welfare indifference curves both avoids assuming cardinal utility and renders a useful social welfare function. This claim, however, is patently false. Any set of indifference curves, either for individuals or society, with cardinal numbers arbitrarily assigned to them, implies cardinal utility. As they emanate from the origin of the diagram, the numbers must increase in magnitude to reflect the fact the curves farther from the origin are preferred to those closer to it because, by assumption, more goods are preferred to less. But the very assignment of cardinal numbers means that the differences in ordinal rank between combinations of goods are cardinally measurable. For example, if an individual's indifference curve with 2 units of X and 3 units of Y is assigned the number 12 and his indifference curve

[34] Joseph Schumpeter, *History of Economic Analysis* (New York: Oxford University Press, 1954), p. 1062.

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with 2 units of X and 4 units of Y has the number 15, the difference in rank is 3. The extra utility of having the fourth unit of Y is 3, i.e., its marginal utility is cardinal.

Thus, despite his thinly-veiled hostility toward "Robbins's dicta concerning the inadmissibility of welfare economics," his solution is a mathematically-dressed up version of the one posed by Robbins himself.[35] Although Robbins denied that cardinal numbers are thereby implied, he did assert that one can assess the differences in ordinal rankings, a condition which is "accepted doctrine" as a requisite for measurement of the preference rank. As Rothbard makes clear, the preference rank can only be revealed in action; "only pure rankings are revealed by acts of choice" while "differences in rank are not so revealed and are therefore . . . irrelevant to economics."[36]

Furthermore, if differences in rank cannot be demonstrated in action, neither can "indifference." Instead, both indifference and intensity of preference are psychological concepts and, thus, using them in utility analysis is impermissible.[37] While this argument is widely accepted for "differences in rank," it is widely rejected for indifference. Yet, if preference can only be demonstrated in action, economic theory can say nothing about either differences in rank or indifference.[38]

Finally, to construct indifference curves one must presuppose infinitesimal units: for individual indifference curves, units of the goods; for social indifference curves, units of the utility of individuals. Yet, human action cannot be predicated upon infinitesimal differences. Such differences are imperceptible so a person could not establish a preference between the imperceptibly-different options; thus, he could not demonstrate a preference by action on the basis of the imperceptible difference.[39] Demonstrated preference precludes the existence of smooth, continuous utility functions and the use of calculus in utility and welfare economics.

It was not these criticisms, made by Rothbard, that convinced New Welfare economists to surrender their attempts, but the demonstration by Kenneth Arrow that, given reasonable preconditions, it is impossible to construct a

[35]Samuelson, *Foundations,* p. 249. Contra Samuelson, Robbins did not think that the impossibility of interpersonal comparisons of ordinal utility ranks prohibited welfare economics. He argued that it prohibited the Old Welfare economics based on the assumption of cardinal utility. This was the major theme offered in Robbins, "Interpersonal Comparisons of Utility."

[36]Robbins's discussion is in Robbins, "Robertson on Utility and Scope," *Economica* (May 1953): 104. Professor Rothbard's comment is in idem, "Toward a Reconstruction," p. 235.

[37]It makes utility and welfare theory branches of psychology instead of strictly praxeological disciplines.

[38]On indifference, see Rothbard, "Toward a Reconstruction," pp. 236–38.

[39]Ibid.

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consistent social welfare function.[40] This demonstration destroyed the previous work of Tibor Scitovszky in constructing social indifference curves by proving that they intersect, i.e., they have intransitive preferences.[41] In his response, Samuelson failed to grasp the destructive power of Arrow's theorem. Samuelson used the analogy of family welfare to explain how the social welfare function evaluates the utility of different individuals in a consistent way.[42] Assuming that society consists of at least two members, each one has utility dependent on the consumption of his own set of goods which is independent of the consumption of other members. The "ethical worth" of each person's consumption is accounted for by a social welfare function that constrains society to act "as if it were maximizing their [sic] welfare function." The constraint is the distribution of social income across all members which must be distributed by "lump-sum transfers . . . that ensure ending up with equal social marginal utilities."[43]

While these conditions do result in a consistent social welfare function, they still fail to circumvent Arrow's theorem. Arrow did not contend that it was impossible to construct a consistent social welfare function, but that if it was consistent it would violate at least one of his "reasonable" preconditions, as Samuelson's function did. Samuelson's exercise was in vain.[44] Social welfare theory of the New Welfare economics, therefore, lay in ruin by the mid-1950s.[45]

The market-failure approach has had a much longer and more pernicious life. It takes note of the fact that actual market systems never achieve perfectly-competitive, general equilibrium; and thus, they are never Pareto Optimal, let alone at the bliss point of social-welfare maximization. Thus, various types and degrees of government intervention can be justified as movements toward Pareto Optimality, i.e., increases in social welfare.

[40]Kenneth Arrow, *Social Choice and Individual Values*, 2nd ed. (New York: John Wiley and Sons, [1951] 1963).

[41]Tibor Scitovszky, "A Note on Welfare Propositions in Economics," *Review of Economic Studies* 9 (1941): 77–88.

[42]Samuelson's thinly-veiled contempt for Arrow's work is illustrated in his comment about how "conventional theory" can be saved on the analogy of "family consensus." He says, "Perhaps Arrow will produce a proof that such a consensus is impossible." Samuelson, "Social Indifference Curves": 9.

[43]Ibid.: 10 and 13. The condition of "equal social marginal utilities" cannot be met by a social welfare function of ordinal ranks; only if cardinal numbers are attached to the social indifference curves is such a condition definable, let alone achievable. But assigning cardinal numbers implies cardinal utility whose marginal social values can be made equal. Ordinal ranks cannot make the "social (ordinal) utility of every person's last dollar equal," as Samuelson claims. Ibid.: 15.

[44]Arrow, *Social Choice*, pp. 96–103.

[45]On the concession of defeat, see Abram Bergson, "On the Concept of Social Welfare," *Quarterly Journal of Economics* (May 1954): 249; and Paul Samuelson, "Welfare Economics: Comment," in *A Survey of Contemporary Economics*, B.F. Haley, ed., vol. 2 (Homewood, Ill.: Irwin, 1952), p. 37.

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Given certain preconditions, a perfectly-competitive market system can be shown to achieve a point on the Utility Possibilities Frontier, i.e., it satisfies all three Pareto Optimality conditions. If consumers maximize utility, they will purchase each pair of goods so that its MRS is equal to its corresponding ratio of prices. Under perfect competition, prices for all goods, and therefore price ratios for all pairs of goods, are the same for all consumers. By equating his MRS to the common price ratio, each consumer (unwittingly) equates his MRS to that of every other consumer, satisfying the Pareto Optimal condition for consumption. If producers maximize profit, they will hire factors so that the MRTS between any two equals the corresponding price ratio between them. Perfect competition ensures that all producers face the same prices for all factors; thus, their maximizing behavior leads to the satisfaction of the Pareto Optimal condition for factor use. The Pareto Optimal production condition requires the MRT for each good to equal its MRS. Since, for each pair of goods the MRT is identical to the ratio of its marginal costs, perfect competition satisfies this condition because profit maximization occurs only when the price of each good equals its marginal cost.

Within this framework, the theory of market failure proceeds from the observation that real world market systems neither satisfy the preconditions for nor exhibit the outcomes of perfect competition. Consumers and producers pursue non-economic goals instead of maximizing utility and profit. Prices diverge from marginal costs because of "monopoly" elements. Real markets do not always equate the prices paid by different consumers for the same good. Costs born by private producers may not include all those born by society at large because of externalities.[46]

This approach turns the Pareto Rule on its head; instead of being a barrier to intervention, it guarantees high levels of government activity. Real world markets cannot be perfectly competitive; a perfectly-competitive situation assumes conditions that cannot be achieved in the real world.[47] Demand curves in the real world always slope downward to the right, ensuring, within the neoclassical framework, that prices will always exceed their corresponding marginal costs. Thus, government can be kept busy intervening with anti-trust laws to make actual markets more like perfectly-competitive ones, regulation to force actual firms to act like perfectly-competitive ones, and taxes and subsidies to equate actual private costs to social costs.

[46]On the theory of market failure, see Francis Bator, "The Anatomy of Market Failure," *Quarterly Journal of Economics* 72 (1958): 351–79.

[47]Not the least of these assumptions is perfect information. After listing the standard set of assumptions, F. A. Hayek comments on the meaning of perfect information. "I shall here," he says, "not go into the familiar paradox of the paralyzing effect really perfect knowledge and foresight would have on all action." See Hayek, "The Meaning of Competition," in *Individualism and Economic Order* (Chicago: University of Chicago Press, 1948), p. 95.

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These problems of market failure are chimeras—illusions created by the artificial construct of perfectly-competitive, general equilibrium.[48] They pose no difficulty for Rothbard's welfare theory because it is not constructed within such a framework. As he puts it, "the theorem of maximum social utility applies not to any type of 'perfect' or 'pure' competition, or even to 'competition' as against 'monopoly.' It applies simply to any voluntary exchange."[49] Moreover, general equilibrium is inconsistent with the principle of demonstrated preference upon which both the New Welfare and Austrian Welfare economics are built. Preference can only be demonstrated in actions taken by participants in actual exchanges given actual situations. Pareto Optimality or Efficiency as developed within the general-equilibrium framework fails to describe actual situations or allow for actual exchanges; in fact, action itself is inconsistent with general equilibrium. New Welfare economics utterly fails to provide a useful criterion of even the necessary condition of social welfare maximization.

Moreover, the use of a general-equilibrium method to define Pareto Optimality makes this technique unable to provide a framework for *price determination*, but the conditions of Pareto Optimality are defined in terms of perfectly-competitive, general-equilibrium prices. Demand and supply curves are actions based upon, and demonstrations of, people's ordinal preferences, *given the existing conditions under which the actions are taken*. Since the conditions of actions in general equilibrium cannot exist in the real world, the prices of general equilibrium cannot exist either. Yet, the definition of efficiency, e.g., price must equal marginal cost (or the conditions of Pareto Optimality, e.g., price ratios must equal marginal cost ratios) are defined by these prices, i.e., in terms of the conditions of general equilibrium.

The existence of general equilibrium prices is inconsistent with the principle of demonstrated preference upon which any theory of price determination rests. It is impossible for a person to be in a situation of acting as described by general equilibrium; therefore, he cannot demonstrate a preference under such conditions, since preferences can only be demonstrated in actual situations and postulated about in conceptually-possible situations. Even if one accepts the existence of such prices, the market failures developed in this framework are fictitious since they compare two general-equilibrium states, both impossible to attain in the real world. When asserting market failure, New Welfare economists are not comparing an ideal-

[48] F.A. Hayek says, "It is difficult to defend economists against the charge that for some 40 to 50 years they have been discussing competition on assumptions that, *if* they were true of the real world, would make it wholly uninteresting and useless." See Hayek, "Competition as a Discovery Procedure," in *New Studies in Philosophy, Politics, Economics and the History of Ideas* (Chicago: University of Chicago Press, 1978), p. 179. Emphasis in original.

[49] Rothbard, "Toward a Reconstruction," p. 255.

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ized, perfectly-competitive, general-equilibrium market system with an actual market system, they are comparing an idealized, perfectly-competitive, general-equilibrium market system with an idealized, imperfectly-competitive, general-equilibrium market system. That the latter is inferior to the former is wholly irrelevant to any actual market system and, thus, to genuine welfare theory.

In contrast, Austrian price theory has as its goal the explanation of actual market prices. It demonstrates that the actual price of the existing stock of each good is determined solely by the subjective value placed on it. Each individual acts in accordance with his preferences: buying to add to his stock, selling to diminish his stock, or holding to retain his stock. The price that exists at any moment in time results from these actions. These actual prices are unrelated to those of general equilibrium; but being real prices determined by real actions, they are based on demonstrated preferences and, thus, are relevant for welfare theory. This is the foundation of Mises's demonstration of profit and loss as the correct objective test of social-wealth changes discussed above. Moreover, the voluntary exchanges by which actual prices are determined in real markets involve a set of Pareto-Superior moves as each participant demonstrates his preference by his action. Since nothing can be or need be said about the end-state of these interactions, Pareto Optimality, as an end-state condition, is irrelevant to Austrian welfare theory.

Rothbard recognized that by rejecting the neoclassical penchant for analyzing the real world solely with the imaginary construct of general equilibrium, one must dispense with the use of the Pareto-Optimal version of the Pareto Rule as well, since it is a "static," end-state principle. To reconstruct welfare economics, it must be made consistent with Austrian general economic theories of real markets. Doing so requires using the Pareto-Superior version of the Pareto Rule, which is a "dynamic," step-by-step principle. As he says, "Since we cannot discover people's utilities over time . . . the free market *at any time* will maximize social utility . . . . Thus, in Period 1 the free market will maximize social utility. Then, suppose some producers voluntarily form a cartel in an industry. This cartel makes its exchanges in Period 2. Social utility is again maximized, for again no one's exchanges are being altered by coercion."[50]

Proponents of the New Welfare economics attempted a superficially similar but fundamentally flawed approach to integrating the Pareto-Superior criterion into the general-equilibrium framework. The Kaldor–Hicks compensation principle attempts to circumvent the static, end-state character of the Bergson–Samuelson framework by employing a Pareto-Superior version of the Pareto Rule to judge

[50]Ibid., p. 255.

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movements toward the satisfaction of the optimal conditions. Yet it debases the Rule in a more damaging way than Bergson and Samuelson did by formulating it in potential terms, i.e., a change is Pareto Superior if those who gain benefit enough so that they could compensate those who lose in such a way that no one is worse off.

Nicholas Kaldor demonstrates the ability of the compensation principle to transcend the stricture of the Pareto Rule using the example of repeal of the corn laws in nineteenth-century England. Because this policy would increase the real income of society, though reducing that of landlords, the economist has made his case for it, he claims, "since in all such cases it is *possible* to make everybody better off than before, or at any rate to make some people better off without making anybody worse off."[51] As Rothbard points out, this argument suffers from a grave defect.[52] By transcending the Pareto Rule (some can be worse off after a change and yet the change increases social welfare), it contradicts the very foundation of all welfare theory: social welfare must be based on the welfare of individuals that make up society, which can only be demonstrated in action. Unless the compensation is actually made, it is impossible to tell from the fact that real income has risen whether or not the reduction in *utility* of those who lose can be more than offset by *monetary* compensation. Thus, potential compensation does not eliminate interpersonal utility comparisons; it merely camouflages them in money terms. The Pareto Rule cannot be transcended with a social-welfare calculation that strictly adheres to individual, ordinal utility.

Moreover, the compensation principle, being an extension of the Bergson–Samuelson approach, suffers from the defects of general equilibrium. It is impossible to pronounce on the economic consequences, including welfare, of changing from one actual social state to another with the apparatus of general equilibrium, since neither state can be compared to general equilibrium. One cannot tell which actual social state is closer to general equilibrium. One must first develop an economic theory of actual markets that can establish criteria for comparing actual social states; only then is it possible to build a useful welfare theory.[53] One must first develop an economic theory of actual markets; from it,

[51] Nicholas Kaldor, "Welfare Propositions of Economics and Interpersonal Comparisons of Utility," *Economic Journal* 49, no. 195 (1939): 550. Emphasis original.

[52] Rothbard, "Toward a Reconstruction," pp. 246–47.

[53] Some neoclassical economists recognized this defect of the general equilibrium approach in their development of the theory of second best. They demonstrated that if a market system is not in general equilibrium, then one cannot discern the correct government policy toward a market failure in any one market using the general equilibrium framework. The seminal article on the theory of second best is Kelvin Lancaster and Richard Lipsey, "The General Theory of Second Best," *Review of Economic Studies* 24 (1956): 11–32.

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a theory of the determination of actual prices can be built, and criteria for comparing the social welfare of actual social states can be developed.

Finally, the Kaldor–Hicks argument fails as a value-free justification for government intervention, even if one accepts the dubious concept of potential compensation, since it misconstrues the nature of free-market exchange and government intervention and, by so doing, establishes the status quo as the appropriate benchmark for judging social change.[54] In fact, Kaldor invented the compensation principle in response to an error of Robbins, who said, "the statement that social wealth was increased [by free trade] itself involved an arbitrary element—that the proposition should run, if equal capacity for satisfaction on the part of the economic subjects be assumed, then social wealth can be said to be increased. Objective analysis of the effects of the repeal of duties only showed that consumers gained and landlords lost. That such an arbitrary element was involved was plain."[55]

The error in this assertion is defining consumer gain and landlord loss in terms of the previous state of affairs, i.e., the status quo, which is no longer a social alternative. Each time the duty was levied on exporters of grain, they had their utility demonstrably reduced. Given this state of affairs, they entered into contracts to purchase grain, demonstrably benefiting themselves and the farmers who sold to them. They, and other retailers, entered into contracts with consumers, demonstrably benefiting all participants. Landlords, and other factor owners, entered into mutually-beneficial rental contracts with farmers. In each of these contracts, the prices agreed to by both parties were mutually beneficial. When the duty was no longer levied on exporters, then the demonstrable harm no longer existed. This new state of affairs led to new contracts among the various groups at new prices, lower for grain and land. Acceptance of these new contracts, however, demonstrated the preferences of all parties; they all gain. Only from a fundamental misconception of the nature of voluntary exchange or demonstrated preference could one conclude that landlords lose when they agree to the terms of the new contract. Each party to a voluntary exchange demonstrates that he prefers its terms to whatever alternative actually exists at that point in time. On demonstrated-preference grounds, one cannot tell if the landlords lose in comparing the terms of the new contract with those of the old

[54]On the compensation principle as a defense of the status quo, see Murray N. Rothbard, *The Ethics of Liberty* (Atlantic Highlands, N.J.: Humanities Press, 1982), pp. 203–5.

[55]Robbins, "Interpersonal Comparisons of Utility": 638. Quoted in Kaldor, "Welfare Propositions": 549–50. Kaldor rightly criticizes Robbins, saying, "It can be demonstrated . . . that in the classical argument for free trade no such arbitrary element is involved at all." Ibid.: 550. It is not on the basis of the compensation principle, however, that such an argument can be sustained; but on the principle of mutual benefit in voluntary exchange, as Professor Rothbard demonstrates.

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contract, because no one in the market is now offering the old terms. The old higher price is not a social option and, thus, landlords cannot demonstrate a preference for it once the new terms are offered. The genuine alternatives are only those being offered given the new social situation, the old (status quo) situation is now irrelevant. Comparisons of the ordinal rank an individual places on an alternative at one point in time with the ordinal rank he places on a different alternative at a different point in time are impossible. Since an individual cannot demonstrate a preference between them, such judgments involve illegitimate inter-temporal comparisons of utility.[56]

The logic of Kaldor's compensation-principle solution to Robbins's error was worked out fully by J.R. Hicks.[57] After replicating the Pareto-Optimality conditions of the New Welfare economics, discussed above in somewhat different form, he applies the analysis "as a means of criticizing or testing the efficiency of production by private enterprise," by asserting that, "under private enterprise, any ordinary change in economic policy involves a change in the price-system, and any change in prices benefits those on one side of the market, and damages those on the other. Thus no simple economic reform can be a permitted reorganization in our sense, because it always inflicts a loss of some sort upon some people." In other words, Hicks asserts that market activity itself, and not just the removal of government intervention, creates losses for some participants whenever such activity has effects on prices, i.e., as long as the economy is not in a general equilibrium.[58] While this would seem to prevent welfare analysis of almost all market activity, Hicks claims that "this does not prevent us from applying our [social welfare] criteria to the case of private enterprise, because we can always suppose that special measures are taken through the public revenue to compensate those people who are damaged."[59]

By transcending the Pareto Rule and following the compensation principle to its logical end, Hicks winds up in absurdity. Voluntary exchange, instead of

[56]As Professor Rothbard puts it, "It is not possible . . . for an observer scientifically to compare the social utilities of results on the free market from one period of time to the next." Rothbard, "Toward a Reconstruction," p. 255.

[57]J.R. Hicks, "The Foundations of Welfare Economics," *Economic Journal* 49, no. 196 (December 1939): 696–712.

[58]To illustrate conditions under which the free market would not maximize social welfare (specifically, imperfect competition), Hicks uses the example of a firm closing down. He says, "The loss involved in its cessation is measured by the compensation which would have to be given to consumers to make up for their loss of the opportunity to consume the missing product, plus the compensation which would have to be given to producers to make up for the excess of their earnings in this use over what they could earn in other uses." Ibid.: 709–10. Clearly, this "economic reform" involves no government intervention, but is a purely private affair of voluntary "reorganization" of factor usage.

[59]Ibid.: 706.

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being mutually beneficial, "inflicts a loss of some sort upon some people." Yet, social-welfare judgments of "private enterprise" are still possible because "we can suppose" that losers in exchange are compensated "through the public revenue." But what kind of private-enterprise system is it that requires, for a demonstration of welfare enhancement, an all-encompassing government program of income distribution? If Hicks means that the compensation is only potential, and must not actually take place, then why is it necessary to suppose "special measures are taken" to compensate losers? And if he means that the compensation is only potential but the gain to winners exceeds the loss to losers because enough additional income is generated by the change to compensate all losers so that everyone is better off, then he is confusing income with utility and making assertions about preferences apart from people's actions.

Instead of correcting the deficiencies of the New Welfare economics, the compensation principle adds to them. Every actual market activity, not identical to the status quo, is *a priori* suspect on welfare grounds, since one can identify "losers" according to the compensation-principle. Thus, a vast new field is available for government intervention, especially in the form of income distribution. Ignoring these new possibilities, Hicks examines the situations of market failure within his framework, finding them to be the same as those of the social welfare function approach. He then concludes in the same way that economists of the social welfare function variety do: economic theory can delineate the conditions for Pareto Optimality, what Hicks calls efficiency, but not interpersonal utility comparisons, what Hicks calls distributive justice.[60]

For both the social welfare function and the compensation approaches, if income distribution could be specified by economic theory, then they would have a complete welfare theory. In fact, the social welfare function technique could do this *ex ante*. The social welfare function is necessary to decide among points on the Utility Possibilities Frontier because the framework does not specify an initial income distribution among individuals. If it did start with such a specification, or specified initial factor ownership among individuals, then market exchange would lead to a single point on the UPF, which by construction would maximize social welfare.

Since Austrian Welfare economics is based on Pareto Superiority (a step-by-step analysis), not Pareto Optimality (an end-state analysis), the importance of a starting point is all the more manifest. The solution provided by Professor Rothbard rests on two value-free propositions: demonstrated preference and self-ownership. That each individual owns, i.e., controls the use of his mind and

[60]Ibid.: 712.

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body is self-evidently true.[61] As Mises showed, the entire corpus of economic theory is axiomatic-deductive: the logical implications of the primordial fact that individuals engage in human action.[62] Yet, action itself, being done only by individuals, presupposes self-ownership. One can no more refute the proposition that individuals are self-owners than the proposition that individuals act, since any attempt presupposes the proposition in either case.

Moreover, the fact of self-ownership is not accepted by just Austrian economists but is a presupposition of the neoclassical school as well. Both schools build price theory from the foundation of individuals who buy and sell in accordance with their own subjective evaluations. In fact, the central problem of welfare economics—interpersonal utility comparisons—disappears as soon as the presupposition of self-ownership is dropped. Without individuals, each making their own evaluations and decisions and actions based upon them, welfare theory could directly postulate a "collective welfare" separate from the individuals that make up society. This fallacy is one even New Welfare economists refused to embrace. Instead, they failed to accept the logical implication of the presupposition of methodological individualism for welfare economics while accepting its implications for price theory.

For welfare economics, the implication is that self-ownership is the proper starting point of analysis. New Welfare economists are led into a contradiction, perhaps by their desire to employ general equilibrium (and thus, mathematical techniques) when they accept self-ownership in price theory, i.e., allowing individual utility and buying and selling to determine prices, and then deny its implications in claiming that income distribution is indeterminate within the nexus of these market exchanges. They recognize the necessity of private ownership of property as a prerequisite of voluntary exchange and market prices, but fail to recognize either that self-ownership of labor is also a prerequisite of these phenomena or the logical connections between self-ownership of labor and individual ownership of other property.

Professor Rothbard avoids these contradictions by accepting self-ownership as the appropriate starting point of welfare economics and then proceeding step-by-step according to the Pareto-Superior version of the Pareto Rule.[63] Each

[61]We are not here dealing with the right of self-ownership but with the fact of self-ownership. While moral ownership cannot be established merely by the fact of ownership, economic ownership can. For a natural-law argument for the right to self-ownership, see Murray N. Rothbard, *For a New Liberty*, rev. ed. (New York: Macmillan, [1973] 1978), pp. 26–37; and idem, *Ethics of Liberty*, pp. 29–34. For an axiomatic argument for the right to self-ownership, see Hans-Hermann Hoppe, *The Economics and Ethics of Private Property* (Boston: Kluwer Academic, 1993), pp. 195–201.

[62]See Ludwig von Mises, *The Ultimate Foundation of Economic Science*, 2nd ed. (Kansas City: Sheed Andrews and McMeel, [1962] 1978), pp. 1–9.

[63]On this process, see Hans-Hermann Hoppe, "Book Review of *Man, Economy, and Liberty*," *Review of Austrian Economics* 4 (1990): 257–58.

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person owns his labor. When anyone employs his labor in an act of acquisition over some item previously unowned, he owns, i.e., controls in action the use of, the item. His action demonstrates a gain in utility, while the failure of others to acquire the item demonstrates their preference not to acquire it. Thus, each such act of acquisition is Pareto Superior. When the owners of means acquired in this way make a voluntary exchange, such an act is Pareto Superior—demonstrably benefiting the participants while doing no demonstrable harm to non-participants. The totality of these acts of acquisition and voluntary exchange, whether of factors or consumer goods, constitute the free market; since each of them is Pareto Superior, the free market creates the greatest satisfaction of individuals' preferences at every point in time.[64]

This conclusion about the free market can be further clarified by examining charges recently made against Professor Rothbard's welfare economics. Roy Cordato claims that one "fundamental problem" with it is that it "ignores the fact that preferences are expressed sequentially through time, as part of a general set of goal-oriented activities. The actor in Rothbard's framework is operating in a static world where actions are undertaken in isolation from one another."[65] But the conclusion about the free market's welfare properties is not "static" in this sense; to the contrary, it is genuinely "dynamic." It properly accounts for social welfare at each successive point in time *when a social interaction takes place*. Thereby, it properly accounts for any possible changes in circumstances during a sequence of actions that influence a person's "goal-oriented activities," including his own preferences and the preferences of others. For private actions, involving no demonstrable preferences of non-participants, which may be part of the sequence of actions a person undertakes to achieve a goal, welfare theory, *per se*, does not apply.

To clarify this point, consider the following illustration. Suppose a man agrees to a one-year contract in which he trades a particular labor skill for some particular compensation, and furthermore, that he does so as part of a sequence of actions which he expects to culminate in the acquisition of a capital gain, for which he has a preference, from trading shares of stock of a particular company. He benefits, as does his employer, at the time he makes the labor contract. At that point in time, the free market has created the greatest satisfaction of individuals' preferences, *given the actual situation they find themselves in at that time*.[66] Having accepted the contract, his situation of acting is changed, including

[64]Hoppe, *The Economics and Ethics of Private Property*, pp. 232–33.

[65]Cordato, *Welfare Economics*, p. 44.

[66]That these circumstances of action at any point in time depend on past action is clear; but this fact does not result in an infinite regress or indeterminacy since the starting point of the free market is self-ownership.

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perhaps his own preferences; thus, some actions he might contemplate taking will now have a different opportunity cost to him. Over time he accumulates sufficient savings from his wages to buy shares of the firm's stock. We know, by the principle of demonstrated preference, that both he and the seller benefit at the time of the exchange. At that point in time, the free market has created the greatest satisfaction of individuals' preferences, *given the actual situation they find themselves in at that time*. But suppose after his purchase of the stock its price falls, so that he regrets having bought it. Or suppose that he comes to regret having agreed to his labor contract before it expires. These circumstances do not represent a failure of the free market to create the greatest satisfaction of individual preferences. To the contrary, if he continues to possess the stock, instead of selling it to someone in the market, he demonstrates his preference for retaining ownership *compared to the actual social opportunities now available to him*; if he fulfills the duration of his contract, he demonstrates his preference for the terms of the contract *compared to the actual social opportunities now available to him*. If he sells the stock and suffers a capital loss he demonstrates his preference for the money received at the time of the sale, or if he resigns his job, he demonstrates his preference for his perceived alternative. In each case, participating in the free market increases his utility. The (assumed) subjective loss he experiences from the capital loss, when viewing the sequence of events in its totality, is not caused by his participation in the free market, but by his lack of entrepreneurial insight into the future state of affairs before he started the series of actions. It is properly assigned to the period in the sequence of his actions when he was acting privately, by retaining ownership of the stock as its share price fell, and not to those moments when he participated in the free market. That such losses occur in no measure diminishes the conclusion that the free market renders the greatest satisfaction of individual preferences *compared to any other institutional arrangement for social interactions*.[67]

The entrepreneurial success or failure of each individual's actions when viewed in sequence is parallel to the success or failure of the specialized entrepreneur in the market. After formulating his expectations of the future profitability of various courses of action, he contracts with factor owners to rent their factor services, and thereby, incurs monetary costs. In each of these contracts, both he and each factor owner gain. Since he owns the goods produced by combining the factors, he earns the monetary profit or suffers the monetary loss

[67]Cordato's charge, that "Rothbard's conclusions [about the welfare properties of the free market] would only hold in an error-free world of perfect knowledge, where expectations necessarily coincide with results," is entirely unfounded. Cordato, *Welfare Economics*, p. 43. This charge is more suitably made against the New Welfare economics.

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when they are sold. In each of the sales, both he and each consumer gain. If these sales generate revenues in excess of his costs, he earns profit; if his revenues fail to cover his costs, he suffers loss. His profit or loss is independent of the fact that he acquires, without exception, subjective benefit in each of his voluntary exchanges. The extent of profit or loss is determined by his entrepreneurial insight, that is, how accurately he anticipated the outcome of the sequence of actions. The welfare enhancing character of the free market is not impugned by entrepreneurial losses, whether they are monetary or subjective.

Far from having an "emphasis on static, unconnected action," Professor Rothbard's welfare economics correctly delineates between actions (including social interactions) which demonstrably increase the utility of each participant at the time they are undertaken given the actual situation in which they are taken, and entrepreneurial insights about the future consequences of the actions. The former can never reduce utility; the latter are the source of either profit or loss from the sequence of actions over time.[68] This delineation also defuses another of Cordato's criticisms: that "by focusing strictly on demonstrated preferences and *ex ante* evaluations, he rules out all consideration of costs and therefore the possibility of utility loss."[69] But acceptance of the principle of demonstrated preference logically requires restrictions on statements about utility to those referring to points in time when action is taken. To make an *ex post* statement about *utility* requires an impermissible inter-temporal utility comparison.[70] Moreover, far from ignoring costs, Professor Rothbard's welfare economics correctly accounts for opportunity costs. Opportunity cost exists only for each action and only at the time the action is taken; it is the subjective value of the most-valuable alternative to the action actually undertaken. Cordato's claim, that "by definition, costs cannot be demonstrated," is irrelevant for welfare theory; what is demonstrated in action is that the subjective value of the action taken

[68]Ibid., p. 44. Professor Rothbard's discussion of entrepreneurship is in *Man, Economy, and State* (Auburn, Ala.: Ludwig von Mises Institute, [1962] 1994), pp. 5–6, 55–56, and 463–69.

[69]Cordato, *Welfare Economics*, p. 43.

[70]Cordato himself criticizes the New Welfare economics for requiring both interpersonal and inter-temporal utility comparisons to implement Pareto Optimality. Cordato, *Welfare Economics*, pp. 6–7. Also, discussing his own concept of demonstrated preference, he says, "preferences that are revealed at one point in time cannot be assumed to remain constant over time." Ibid., p. 59. While it is impossible to say anything on demonstrated preference grounds about the *ex post*, subjective profit or loss of a sequence of actions, it is possible to calculate the monetary profit or loss of the specialized entrepreneur *ex post*, as shown above. Even in the case where a specialized entrepreneur earns profit (loss) from a sequence of actions, however, it is not possible to say that his *ex post utility* is greater (less) than that *ex ante*. Cordato makes this error in his example of an individual who expends resources in a free market pursuing a goal, yet fails to reach it, when he concludes, "clearly he would have experienced a loss in utility." Ibid., p. 43. Such a statement presupposes the ability to make inter-temporal utility comparisons.

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exceeds the subjective value of the best alternative.[71] Neither the subjective benefit nor the subjective cost of an action is demonstrated when an action is taken; preference is demonstrated, and demonstrated preference is a sufficient foundation for welfare economics.

Value-free welfare economics must be based on the principle of demonstrated preference, acceptance of which precludes inter-temporal utility comparisons, since an individual cannot demonstrate a preference in action between two different situations at two different points in time. Welfare economics can say nothing about *ex post* utility; instead, it must be content to describe utility *ex ante* or at the time of action when the individual actually demonstrates a preference between two relevant alternatives. As Professor Rothbard has correctly pointed out, however, general economic theory shows a greater tendency for correspondence between *ex ante* anticipations of gains from a sequence of actions and *ex post* realization of such gains in a free market *vis-à-vis* an interventionist system.[72] Specialized entrepreneurs on the market appeal to the test of profit and loss to determine whether or not they have arranged production to best satisfy consumer preferences while consumers themselves appeal to trial and error to determine which of the various consumer goods best satisfies their ends. By distorting economic calculation and interfering with consumer choice, interventionism retards this tendency to match *ex ante* and *ex post* utility.

Instead of being a weakness of Professor Rothbard's welfare theory, the fact that "by definition, though, people always expect to benefit, relative to the alternatives, from every action that is undertaken," as Cordato claims, is true, and therefore, a great strength of it. Cordato misconstrues how Austrian Welfare economics judges social interactions, namely, with the Pareto-Superior version of the Pareto Rule, when he concludes that, "this is true under any institutional arrangement," including "action taken at the point of a gun."[73] The relevant question for social welfare in such a situation is whether or not this interaction *itself* increases the utility of at least one person without decreasing that of another *at the time it occurs*. Since the victim of violence would not have voluntarily undertaken the interaction in the absence of aggression, one can *infer* that such an involuntary social interaction, unlike a voluntary one, forces him to accept a less-preferable alternative. It is by this inference, and not his action under duress (i.e., after the aggression has begun), that the Pareto-Inferior nature of involuntary interactions is

[71] Ibid.: 43. On this criticism of Cordato, see Gordon, "Toward a Deconstruction," p. 105.

[72] Murray Rothbard, *Power and Market* (Kansas City: Sheed Andrews and McMeel, 1970), pp. 18–20. David Gordon also makes this point in "Toward a Deconstruction," p. 105.

[73] Cordato, *Welfare Economics*, p. 43.

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seen.[74] There is no inconsistency between the Pareto-Inferior nature of involuntary interactions at the moment aggression begins and the achievement by the victim of his highest preference by adjusting his actions during the time under duress.

Professor Rothbard's welfare economics is constructed from Misesian general economics. It is the only welfare economics that is completely consistent with the principles deduced from the axiom of action. Each person owns his labor, i.e., his mind and body. Employing his labor, man acts by evaluating the possible ends he can attempt to attain by the combination of means he owns. The scarcity of means requires him to choose from among the possible ends; to be purposeful his choice must be according to his evaluations. When he acts, one can infer that he has established a preference between the course of action taken and the course of action not taken; he chooses to do what he prefers more and sets aside what he prefers less. From the axiom of action, one can deduce only an ordinal ranking of preference; quantitative comparisons of subjective value are impossible for lack of a cardinal index and a common unit of subjective value. Only his concrete action can demonstrate his preferences.

Welfare economics examines the consequences of social interactions in terms of the demonstrated preferences or utility of individuals. Social interactions can be either voluntary or involuntary; the former is done without, and the latter with, the use or threat of invasive violence. The subjective nature of value implies the impossibility of comparing either the utility of different individuals from a social interaction or the utility of any individual at different points in time. The impossibility of interpersonal comparisons of utility restricts welfare economics to conclusions about interactions that benefit some without harming any one. Such an interaction is called Pareto Superior. The impossibility of inter-temporal comparisons of utility restricts welfare economics to conclusions about interactions at the time they occur. Any voluntary interaction demonstrably benefits each participant at the time it occurs, while doing no demonstrable harm to any non-participant. An interaction that benefits at least one person while doing no harm to anyone else increases social utility, i.e., either improves or leaves unchanged the preference rank obtained by every individual. Any involuntary interaction demonstrably benefits some participants at the time it occurs, while demonstrably harming others. An interaction that harms at least one person is called Pareto Inferior, and cannot increase social utility.

[74]Consider the analogy of government taxing a person's income. At the time the tax is paid, under duress, the person is made worse off than otherwise. After the tax is paid, he will adjust his action to the new circumstances, including this aggression, in the way he finds most preferable. That he does so is no refutation of the Pareto-Inferior nature of the interaction between the tax-man and himself.

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Every social interaction presupposes ownership of the means used by each participant and every demonstration of preference, upon which rests the welfare criterion of changes in social utility, and presupposes self-ownership of labor. Welfare economics is incomplete without an analysis of the acquisition of the items traded in voluntary exchanges, and is inconsistent if such an analysis contradicts the principle of self-ownership of labor.

Welfare economics begins with each person owning his labor. With his labor, he acquires unowned items existing in nature. Each such act of acquisition demonstrably benefits the person engaged in the act at the time it occurs, while demonstrably harming no one. Their abstention from acquisition or transformation of the item demonstrates the preferences of non-participants for devoting their means to other ends. Each such act of acquisition is Pareto Superior. Once the item is owned by the first-user, others no longer have the option of being its first-user; thus, their preferences at that point in time have no bearing on the Pareto-Superior nature of the acquisition by the first-user. For a person to obtain ownership of the item from the first-user in a Pareto-Superior interaction, the person must induce the owner to either voluntarily exchange it or voluntarily give it away.

With his labor and homesteaded means, each action a person takes benefits him at the time of the action. This is true for private actions, such as reading a book in one's home, and for social interactions, such as contracting to sell one's labor or to buy consumer goods. Non-participants in these actions demonstrate their preferences for allowing these actions and interactions by devoting their means to other actions and interactions. Each private action and voluntary social interaction is Pareto Superior. Once the actions or interactions take place, non-participants no longer have the alternative of acting toward them in a participatory way. Whatever actions non-participants take after the action or interaction of others are irrelevant to the Pareto-Superior nature of the action or interaction. In fact, non-participants must now establish a preference for the new alternatives actually available to them. When they act upon these new preferences in light of the new circumstances, they benefit.

The same principle applies to each person's preferences inter-temporally. When someone buys a consumer good, he benefits at that time. If after the purchase, he reevaluates the good, placing it lower on his preference rank, then he will act according to his new preferences. His new action will again benefit him. As economists, we cannot compare his utility inter-temporally, since he cannot demonstrate a preference between these two states of affairs. It is not the new action or interaction that reduces his utility; rather, it is his failure to correctly anticipate future conditions, including his own preferences, i.e., it is

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his failure as an entrepreneur. This assessment of the sequence of actions of the individual is the analogue to the assessment of the sequence of interactions directed by the specialized entrepreneurs in social production and exchange.

The free market consists of all acts of acquisition and interactions that are voluntary, and is brought about by a legal system that defends these property titles and contracts. The free market consists entirely of Pareto-Superior movements. Thus, it achieves the highest degree of utility possible for each person, given the conditions of action and interaction, including the different preferences of different people. It is in this sense that the free market can be said to maximize social utility; it is not the utility that is social but the actions—the free market gives the greatest possible utility to every individual in their interactions.[75]

Interventionism consists of the mixture of voluntary and involuntary acts of acquisition and interactions. Each involuntary act of acquisition or interaction is Pareto Inferior. Thus, interventionism fails to achieve a degree of all individual utility as great as that of the free market.

Professor Rothbard correctly concludes that the free market achieves the greatest social utility possible of any economic system. His achievement is no less than a rigorous proof of the long-standing conviction among economists that the free market, without qualification, maximizes social welfare.

[75]This is analogous to the distinction Professor Rothbard makes when discussing the difference between individual utility and total utility, as the aggregation of the marginal utilities of units of a stock, and the marginal utility of different-sized units. Total utility is an illegitimate, cardinal concept which must be rejected. As he points out, what is marginal, in cardinal terms, is the unit of the stock, not the utility obtained by its possession. See Rothbard, "Toward a Reconstruction," pp. 234–35. Perhaps this definition of social welfare will satisfy those who have asked explicitly for one. See, Gary North, "Why Rothbard Will Never Win the Nobel Prize," in *Man, Economy, and Liberty*, Block and Rockwell, eds., p. 105.

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The Recession of 1990: An Austrian Explanation

Arthur Middleton Hughes

> In the misdirection of labor and the distortion of the structure of production during past business cycles, it was fairly easy to point to the places where the excessive expansion had occurred because it was, on the whole, confined to the capital goods industries . . .
>
> In contrast, the present expansion of money, which has been brought about partly by means of bank credit expansion and partly through budget deficits, has been the result of a deliberate policy, and has gone through somewhat different channels . . .
>
> I do not doubt that in a sense we have today the same kind of phenomenon, but the over-expansion, the undue increase of labor employed in particular occupations, is not confined to a single, clearly defined block such as the capital-goods industries. It is now spread much more widely, and the distribution is much more difficult to describe. It is a field I would wish some statistically minded economist would investigate in order to show how the process operated in particular countries.
>
> Friedrich A. Hayek[1]

Why do we have booms and recessions? The conventional Keynesian view is that recessions are a failure of consumer demand. Keynesians, however, are not entirely clear on why consumers periodically act in unison to reduce their consumption. A more logical answer to the question is the Mises–Hayek theory of the business cycle. The ideas of Ludwig von Mises and Friedrich A. Hayek, central to the Austrian school of economics, suggest an entirely different approach to the business cycle from what has become the conventional wisdom for the last 40 years. It is the

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[1] Friedrich A. Hayek, *New Studies in Philosophy, Politics, Economics and the History of Ideas* (Chicago: University of Chicago Press 1978), p. 212–13.

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purpose of this paper to explore the Austrian explanation of the business cycle, sometimes called the Austrian business cycle theory (ABCT), and to apply that theory to the recession of 1990–1992.

The Structure of Production

The Austrian view of the economy differs substantially from that of Keynesians or monetarists in their treatment of capital. Keynesians tend to lump the capital accumulated by various industries throughout the country into an amorphous and *given* "stock of capital."[2] Investment by business is treated in GNP analysis as a single variable, regardless of the type of business in which the investment takes place. Both Keynesians and Monetarists tend to deal with aggregates in explaining business cycle theory whereas, as pointed out by James Clark and James Keeler, "macroeconomic aggregates are not considered meaningful concepts by the Austrians who are more concerned with relative changes among the components of the aggregates."[3] In fact, the whole concept of the Gross National Product, as defined in conventional economics today, leaves out of the analysis more than 40 percent of the industrial activity going on every year—the activities in the higher stages of production.[4]

Austrian economists see the industry of any developed economy as a progression of activities from the most basic extraction of materials from the earth (by means of mining, forestry, fishing, or farming), through the production of semi-finished goods (such as lumber, steel, chemicals, and machinery), down to the production and sale of final goods and services to consumers.[5]

[2]John Maynard Keynes, *The General Theory of Employment, Interest, and Money* (New York: Harcourt Brace, 1936), p. 245. "This does not mean that we assume these factors [including capital] to be constant; but merely that, in this place and context, we are not considering or taking into account the effects and consequences of changes in them."

[3]James Clark and James Keeler, "Misconceptions about Austrian Business Cycle Theory: A Comment," *Review of Austrian Economics* 4 (1990): 208–11.

[4]In 1986, according to the Department of Commerce study "The Interindustry Structure of the United States," 43.8 percent of the output of all business units was of "intermediate goods" (or capital goods requiring further work before they are ready for the ultimate consumer). The remaining 56.2 percent were final goods, for purchase by individuals, governments, and other businesses. This 43.8 percent representing intermediate goods does not show up in the Gross National Product accounts at all, which treats capital as consisting only of the final goods purchased by businesses.

	Millions of Dollars	Percent
Gross Intermediate Products	$3,297,977	43.8
Gross National Product	$4,235,116	56.2
Gross National Output	$7,533,093	100.0

[5]Friedrich A. Hayek, *The Pure Theory of Capital* (Chicago: University of Chicago Press, [1941] 1975), chaps. 5 and 6.

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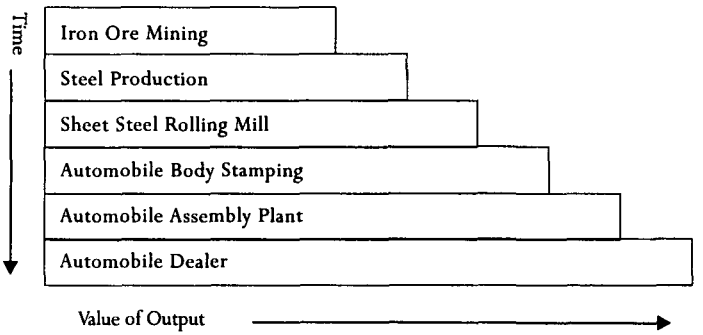

Figure 1. The Structure of Production

One big difference between the companies in different levels in the structure of production is the time that must elapse before their investments return a profit: see figure 1. A retailer may add a distribution warehouse, and begin to make a profit from it right away, in terms of having more stock on hand, fewer back orders, or greater ability to satisfy the consumer.

A higher-stage firm, such as a coal mine or primary metal producer, often has a much longer lead time. It may take five or ten years before a new plant can be built, equipped with proper machinery, staffed with trained workers, and put into full operation such that the profits from operations will begin to amortize the original investment.

Austrian economists add to this another reason for the different impact of interest rates on different levels of the structure of production. In the absence of governmental interference, interest rates in the market are determined by the interactions of the differing time preferences of borrowers and lenders of money. Interest rates send valuable and important signals to market participants. These signals have different meanings to industries depending on where they are on the structure of production. Higher-stage industries are far removed in time from the ultimate consumers. They must, as a result, use prices and interest rates as important messages about the state of the market. Lower-stage industries do not need these messages as much, since they meet daily with the consumers and can judge demand directly. It usually takes a long time for goods and services produced in higher stages to reach the ultimate consumer. A bar of iron, for example, may go through dozens of stages before it emerges as a rotor on a fan in someone's personal computer. Someone has to pay the interest charges on that piece of iron while it waits, in factory after factory, to be transformed, finally, into something that a consumer would want to buy. Higher-

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stage producers, therefore, without realizing it, must carry the burden of subsequent interest charges which, if the interest rates increase too much, will affect the sales of the consumer products made out of their output. Lower-stage producers, who are closer to the consumer in time, do not have to carry the same interest burden, and so are less affected by changes in rates.

Because of these dissimilarities, changes in the cost of capital result in very different investment patterns. For a lower-stage industry (such as a retailer, wholesaler, or food producer), the cost of capital is not as important, because the interest charges do not have to be carried very long before the payout begins. For a higher-stage industry, increases in the cost of capital often mean the difference between undertaking a new project or not doing it at all.

Why Industries Differ in Capital Needs

To illustrate the difference, consider two different industries: a food retailer and a primary metals manufacturer.

The food retailer is selling a perishable commodity. He has few warehouses. Most of his capital is tied up in goods on display in his stores. Movement of stock is brisk. If he were to add a new store, a warehouse, or additional trucks, he would expect to build or buy them rapidly, and have them earning income within a year or so of the purchase decision. If the interest rate is 8 percent, or 12 percent—it does not matter very much. At 12 percent, he may hesitate to build a new store but he will still add to his truck fleet.

The primary-metal manufacturer has a very different attitude. Modern metal extraction and production involves environmental questions, very elaborate and expensive capital equipment, and many years of planning. A new steel, copper, or aluminum plant may cost many hundreds of millions of dollars, and take 10 years from site purchase to full production. Here, the interest rate is everything.

Suppose that the cost of a new plant is $200 million, and that it will pay a return of $40 million per year when it is completed. At a market rate of interest of 12 percent, such a plant would be worth $333 million. Time is money. How long would it be before the cost of interest payments would drive the original investment of $200 million up over $333 million? In other words, how much time does the firm have to build the plant before the investment is no longer profitable? The formula for the long term value (V) of an investment which yields Y amount per year when the market rate of interest is (r) is:

$$V = Y / r$$
$$V = \$40 / .12$$
$$V = \$333$$

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The formula for the cost (C) including interest of an investment (I) for n years at (r) rate is:

$$C = I(1+r)^n$$

Solving for n, the formula becomes:

$$n = \text{Log}(C/I) / \text{Log}(1+r)$$

The maximum time that an investor can afford to wait for his return is thus based both on the rate of interest, and the value of the expected yield in relation to his investment. His maximum time is when C = V. If we substitute the value of the investment (Y / r) for C in the above formula, it becomes:

$$n = \text{Log}(Y/(I * r)) / \text{Log}(1 + r)$$

If the interest rate is 12 percent, the plant must be up and running in four-and-a-half years, or the cost will exceed its market value.

$$n = \text{Log}(40/(200 * 0.12)) / \text{Log}(1.12)$$
$$n = 4.5 \text{ years.}$$

On the other hand, if the market rate of interest is 8 percent, the value of the same plant that returns $40 million per year is $500 million. At 8 percent per year, how long will it be before interest payments have forced an original investment of $200 million up to $500 million?

$$n = \text{Log}(Y/(I * r)) / \text{Log}(1 + r)$$
$$n = (\text{log}(40/(200 * 0.08)) / \text{Log}(1.08)$$
$$n = 11.9 \text{ years}$$

So, at 8 percent they can afford to take a maximum of 11.9 years to build the plant before it is no longer profitable. Most higher-stage investments take longer than four-and-a-half years before they begin to pay dividends. Most lower-stage investments take much less time than that.

What this tells us is that the market rate of interest means different things to different segments of the structure of production. When rates go down, a great many higher stage projects that were uneconomic at high interest rates become at once feasible. When rates go up, many higher-stage long-term projects have to be scrapped. These simple rules do not apply to lower-stages of production, simply because their payoff times are much shorter. They don't have to pay as much interest on their typical project. A lower stage producer is less likely to embark on an investment project.

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Why the Money Supply is Expanded

Western governments since the 1940s, following Keynesian principles, have increased their money supplies every year, thus leading to constantly-rising prices *believing that it was good for their economies.* They have also found that inflation is a good way to finance their governmental-spending programs without the need to increase taxes—the increased spending also being a Keynesian prescription for achieving full employment. How much increase in the money supply is the desirable goal? Keynesians and many monetarists would favor an annual increase of 5 to 6 percent per year.[6]

> A laissez faire system is doomed to wasteful ups and downs of the business cycle and perhaps to long fits of stagnation. . . . Simple capitalism has been replaced virtually everywhere by the mixed economy (a "welfare and managed economy"). Everywhere in the Western world, governments and central banks have shown they can win the battle of the lasting slump if people want them to . . . Just as we no longer meekly accept disease, we no longer need accept mass unemployment.[7]

The core of the Austrian macroeconomic theory is that government "fine tuning of the economy," through government-orchestrated expansions and contractions of the money supply, are actually the *cause* of business cycles because of the differing impact of the resulting interest rate changes on different stages in the structure of production. Roger Garrison has pointed out that Mises and subsequent Austrian theorists, influenced by Knut Wicksell, see a "distinction between the natural rate of interest and the bank rate of interest" and recognize "that the bank rate can diverge from the natural rate . . . The institutional setting in which the interest rate reflects both the intertemporal preferences of market participants and the actions of policy makers, then, figures importantly in the Austrian account of the artificial boom and inevitable bust. Fritz Machlup accurately summarized the Austrian view with the statement that '*monetary* factors *cause* the cycle but real phenomena *constitute* it'. . . . The focus of the Austrian theory is on the actual market process that translates the monetary cause into the real phenomena and hence on the institutional setting in which this process plays itself out."[8] Here is the way it works.

The Austrian Explanation of the Business Cycle

When the money supply is expanded, the cost of capital comes down. Industries in higher stages find that many of their long-term projects are now feasible. They

[6]Paul Samuelson, *Economics*, 10th ed. (New York: McGraw-Hill, 1976), p. 332.

[7]Ibid., p. 345.

[8]Roger W. Garrison, "New Classical and Old Austrian Economics: Equilibrium Business Cycle Theory in Perspective," *Review of Austrian Economics* 5, no. 1 (1991): 91–103.

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begin to build new productive facilities which have long-term payouts. To build these plants, they have to hire more workers which they pay with borrowed money. The hiring of workers, and the competition for capital equipment and resources, bids up the prices of goods and the wages of the workers, and increases interest rates. The rising rates put more pressure on the government to ease up credit by further increases in the money supply.

The increased money supply affects mainly the higher stages of production, not the lower stages, because it is higher stages that depend on long-term external capital infusion to undertake their development projects. Eventually, of course, the expansion also affects the lower stages, as highly-paid workers spend their wages on more consumer goods. A boom is in the making.

As long as the government keeps feeding the boom with more and more money, the good times roll. Higher-stage industries undertake more and more costly projects, and more and more workers move to those sectors. Their spending fuels the activities in other sectors, and their absence raises the wages of those still remaining in these sectors. Now all levels of production are competing for loanable funds. The game is up when the monetary authorities finally become alarmed at the level of price increases, and muster the courage to reverse their expansionary course, usually by raising the discount rate or selling bonds on the open market.[9] At this point, the good times come to an end. The expanded spending by consumers tends to force the interest rates back up.

The Coming of the Recession

The inflating economy is like a giant pyramid scheme. As long as the government keeps pouring money in, the system will keep going. Once the government stops, a recession is inevitable.

The first to go will be the long-term capital projects. As interest rates go up, new projects not yet started will be canceled. But many of those which are only half finished will also have to be abandoned. One reason is that capital financing is often obtained on a pay-as-you-go basis. As industries compute the payoff for a project started when interest rates were 8 percent, which now must compete for funds at 12 percent, they realize that the project is a loser. They cut their losses, and abandon the enterprise. The workers are laid off, and often, much of the project is a total loss. The reason? Because most capital goods (semifinished goods and facilities) are specific to an industry, and have little general usefulness. It becomes apparent that much of the expansion undertaken in prior years was really false expansion, based not on a truly-growing economy, but on the government inflation

[9]Mark Skousen, *The Structure of Production* (New York: New York University Press, 1990), pp. 300–1.

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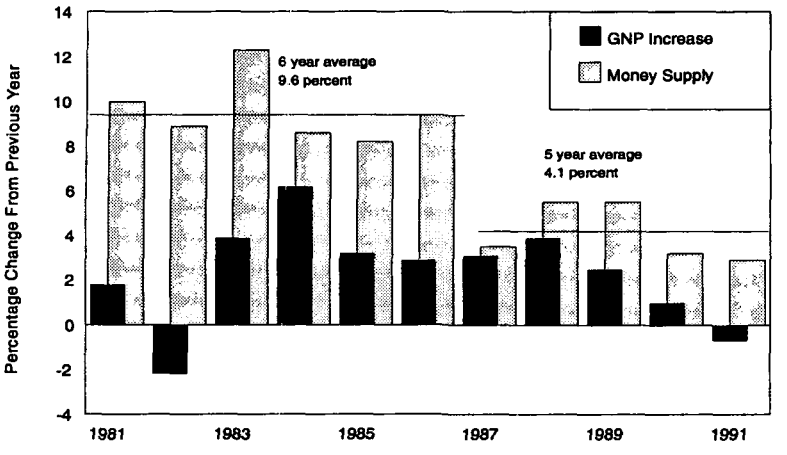

Figure 2. Money Supply Increase versus GNP Increase 1981–1991
Source: *Economic Report of the President 1992* **M = M2**

of the money supply. As workers are laid off in higher-stage industries, they reduce their spending for consumer goods. The recession spreads.

The Recession of 1990

The process just described took place during the years from 1981 to 1992. From 1981 to 1986 (and earlier), the Federal Reserve embarked on a massive increase in the money supply which averaged 9.6 percent per year while the GNP in real terms expanded by only 2.6 percent. From 1987 to 1991, the money supply increased by an average of only 4.1 percent per year while, the GNP increased by about 2 percent.[10] The dramatic drop in government money supply expansion is shown by Figure 2.

The money supply expansion from 1981 to 1986 resulted in expanded bank loans to higher-stage industries, while lower stage industries, at first, were unaffected. As more workers were hired by these expanding industries, and others received pay increases and began to spend their pay on increased consumer goods, the lower-stage-industry bank borrowing increased. Lower-stage capital expansion is based more on anticipated consumer demand than upon the availability of capital. The precipitous drop in government money supply expansion after 1986 ended the boom in the higher-stage industries. This was the beginning of the recession—although it did not show up for four more years.

[10] *Economic Report of the President 1992* (Washington, D.C.: U.S. Government Printing Office, 1992), pp. 300 and 373.

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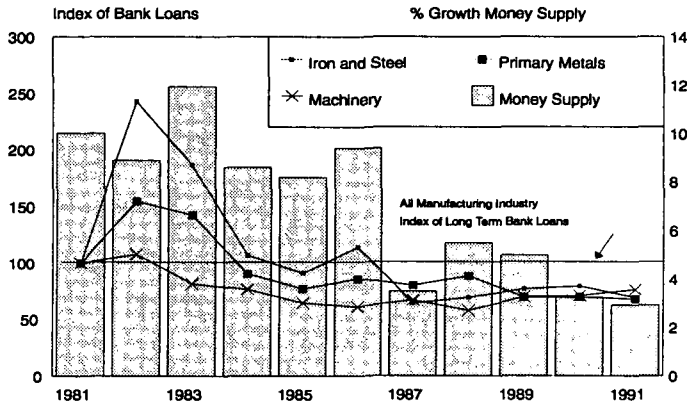

Figure 3. Long-Term Bank Loans by Higher-Stage Industries 1981–1991
All Manufacturing Bank Loans = 100
Source: *Quarterly Financial Report*, Census Bureau and Federal Reserve

Figure 3 depicts long-term bank loans to higher-stage industries (represented by iron and steel, primary metals, and machinery) relative to total-long-term bank loans to all manufacturing industries, superimposed on the annual growth of the M2 money supply. Notice how two of these industries increased their loans, in relation to all manufacturing loans, dramatically during 1982 and 1983. The increase was 250 percent in iron and steel and 150 percent for primary metals. Machinery industries—much lower in the structure of production than primary metals—increased their borrowing only slightly during the expansionary period and were generally below industry averages thereafter.[11]

The fact that the increases in higher stage borrowing from 1981 to 1985 were based on the increased availability of capital funding rather than directly anticipated demand for increased output is shown by the statistics on industrial production during this period. The level of production in the iron and steel industry at the time was far

[11] *The Quarterly Financial Report Program* (*QFR*) of the Bureau of the Census publishes aggregate statistics on the financial results and position of U.S. corporations based on an extensive sample survey. The series began in 1947 and is issued in a 145-page book every quarter. Data are extracted from IRS Form 1120 reports. Use of statistics such as these, which were gathered for another purpose entirely, is bound to result in certain inaccuracies for analytical purposes. Most corporations produce a product mix that does not easily fit into standard SIC (Standard Industrial Classification) codes. The series is used as a basis for the analysis in this paper because it is, basically, the only game in town. The categories covered by the data into which corporations are divided include the following (these are a sample). The column headed "Long-Term Loans" represents long-term loans (due in more than 1 year) from banks in the first quarter 1982 as stated in millions of dollars.

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below capacity (estimated at about 63.5 percent from 1981 to 1985)[12] due to the low level of orders. Lower-stage industries, closer to the consumer, showed no such increased borrowing levels during this period of massive money supply increases.

With the benefit of hindsight, we know today that net shipments of steel mill products would never regain their 1981 levels during the following decade. Why did they expand their production? All that industry participants knew at the time was that funding for expansion was available. Iron-ore production, much closer to its direct customers than the iron and steel industry, did not invest in expansion during the period, and, in fact, closed down several of its operating mines.[13]

When the massive money-supply increases came to an end in 1986, the iron and steel industry collapsed. Prices of their product dropped every year as the higher-capacity and more-efficient new facilities competed with the older plants for what was essentially a disappointing demand.

For the copper industry 1981–1985 were turbulent years. They were years of bankruptcies, shut down mines, laid off workers. But financing was available.

	Long-Term Loans		Long-Term Loans
All Manufacturing	74,129		
All Durable	39,198	All Non-Durable	34,931
Stone, Clay	2,431	Food	7,364
Primary Metals	7,597	Textile Mill	1,824
Iron Steel	5,453	Paper	2,222
Non Ferrous	2,144	Printing & Publ	3,656
Fabricated Metals	4,575	Chemicals	5,238
Machinery	10,428	Indus Chem	2,346
Electrical	3,870	Drugs	352
Transport	4,627	Petroleum & Coal	6,919
Motor Vehicles	1,211	Rubber	1,737
Aircraft	1,802	Other Non-Durable	2,158
Instruments	1,296		
Other Durable	4,373		

Note: The figures do not add up to the total because they are a selection from a large government survey. The selection of industries to illustrate this paper was a subjective one. The statistics in the survey were not collected based on the stage of production. Every industry grouping for which statistics exist is a combination of different heterogeneous companies making different products. I picked the groupings (iron and steel, primary metals, food, textiles, rubber, wholesaling, and retailing) because they seemed to, in general, represent examples of higher-order and lower-order industries. They help to illustrate the Mises–Hayek trade-cycle theory. These examples do not *prove* the validity of the theory, which is an apriori statement which does not require empirical verification.

[12] *Minerals Yearbook 1985*, United States Department of the Interior, p. 577. In 1982—the year of the greatest long-term capital borrowing in the industry—capacity utilization in raw steel was only 48.4 percent.

[13] *Minerals Yearbook 1985*, p. 555–56, reports the following: From 1981 to 1985 US Steel invested $300 million over four years to modernize its Pittsburg, California mill. Timken invested $500 million in a new plant at Canton, Ohio. Tuscaloosa Steel built a new $75 million rolling mill in Alabama. Great Lakes Steel spent $200 million to modernize its plant in Michigan. Wheeling-Pittsburgh, in bankruptcy, began construction on a $50 million plant in West Virginia.

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Despite massive losses in the industry, Standard Oil of Ohio invested $400 million to modernize Kennecott's Utah Copper Division early in the period. After serious losses, the plant was shut down entirely in 1985.[14]

In looking at these figures, it is important to recognize that these numbers are industry averages only. Inside each number are dozens, or hundreds or thousands, of individual firms—some of which were borrowing heavily, others of which may have been doing nothing in the way of external financing. When the figures for an entire industry are shown to be at 270 percent of their previous level, this must mean that some individual firms had really increased their bank borrowing by a major amount. For primary metals, for example, bank loans in the first quarter of 1981 were listed at $4,010 million. By the first quarter of 1982, their level was $7,597 million. Iron and steel had a similar increase: from $1,832 million to $5,453 million. Machinery bank loans increased from $7,898 in 1981 to $10,428 millions by 1982.

But for iron and steel, and primary metals, the borrowing surge stopped after 1984. Thereafter, their bank borrowing was less, proportionately, than the level of all manufacturing. The impact that money-supply increases produce on higher-stage investments is well illustrated by the activities of these two industries.

Lower-Stage Industry Long-Term Borrowing

Contrast this higher-stage borrowing and capital spending with the bank borrowing of lower-stage industries during the same period (1981–1991). Food, rubber, and textiles are industries that are much closer to consumers than are iron and steel and primary metals. We could have also looked at petroleum, drugs and motor vehicles as representative of lower-stage industries, but for special demand reasons, one could argue that the 1980s were not typical years for these groups.

Drugs were affected by the growth of the Medicare and Medicaid programs which began to be important during this period. American motor vehicles were competing heavily, for the first time, with the Japanese. Petroleum is a vertically-integrated multi-national industry with high capital investments in higher-order (drilling) and lower-order (refineries and gas stations) goods.[15]

[14] *Minerals Yearbook 1985,* p. 320–26. Newmont Mining closed their Superior Mine in 1985, taking a $40 million loss. Despite this, they planned to invest $71 million to open a new San Manuel Mine. In 1985, the Burro Chief Copper Company completed a $15 million program to double their operations. Phelps Dodge planned on a $90 million investment at their Morenci Mine in 1985.

[15] It is easier to describe the concept of higher-stage and lower-stage industries than to obtain statistics on them. Logging obviously comes before sawmills which come before drying kilns. Most businesses are involved in many different activities in which the stages overlap. Statistics are not collected based on the structure of production.

The best government source which provides a breakdown relevant to the structure of

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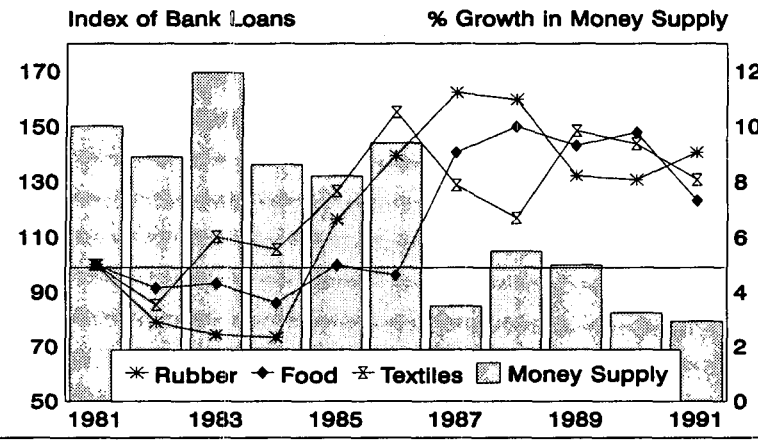

Figure 4. Long-Term Bank Loans by Lower-Order Industries, 1981–1991
All Manufacturing Bank Loans = 100
Source: *Quarterly Financial Reports 1982–1992*, Census Bureau, and Federal Reserve.

Figure 4 depicts the long-term bank borrowing of three lower-stage industries during 1981–1991 as contrasted with total long-term bank lending to manufacturing industries during the period and the growth in the money supply. Our three lower-stage industries illustrate the Mises–Hayek theory. During the period of money supply expansion from 1981 to 1984, they generally maintained their bank loans virtually unaffected by the expansion of loanable funds. Towards the end of the expansion period, textile and rubber industries began to undertake long-term projects that pushed them up to 170 percent and 200 percent of industry averages by 1986. By 1987 consumer spending had driven even food industries to compete for bank-loan funds at a very high rate.

Notice that the peak borrowing for food and rubber came after 1986—at a time when the money-supply growth rate was being drastically curtailed. Why was that? The previous expansion in higher-stage industries produced an increase in consumer spending which pushed lower-stage manufacturers to borrow to expand their facilities to meet it.[16]

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of production is a survey done every 5 years by the Department of Commerce, called the "Interindustry Structure of the United States," based on work by Wassily E. Leontief, whose first tables were prepared for 1919, 1929, and 1939. It provides a rough guide to understanding the position of the industries in the QFR, although not a definitive one.

[16]From 1981 to 1986, real consumption spending in 1987 dollars increased by 19.7 percent, whereas real GNP increased only 15.7 percent in the same period. Consumers were trying to restore their spending patterns after the recession of 1982.

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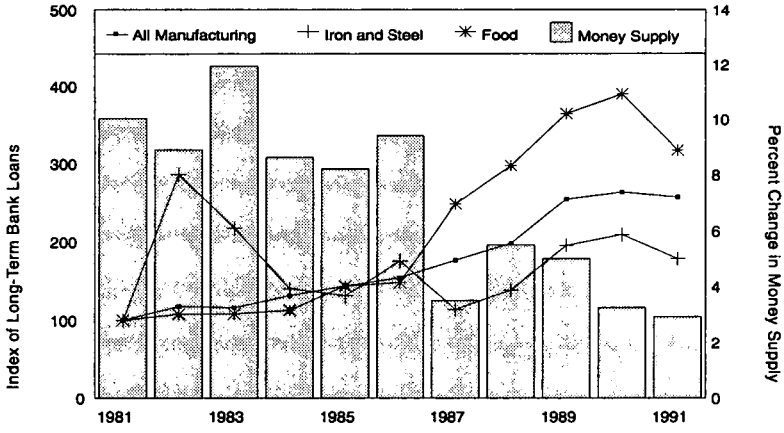

Figure 5. Long-Term Bank Loans to Industry 1981–1991
Source: *Quarterly Financial Report 1982–1992* and Federal Reserve 1981=100.

Figure 5 puts the entire period into perspective. It shows total dollar borrowing by all manufacturing industries adjusted for inflation—the producer's price index. As you can see, long-term bank borrowing by manufacturing industries increased steadily from 1981 to 1991.[17] The dramatic reduction in money supply increases in 1987 did not affect the total borrowing level at all—in fact the average annual increase in borrowing after 1986 was higher than before 1986. What did change was the distribution of that borrowing. Before 1986, most of the increase was led by higher-stage industrial borrowers, represented here by iron and steel. After 1986, the increase in total borrowing was fueled by lower-stage industries, represented here by food.

Most traditional economists looked on the years from 1986 through 1988 as being boom years. They overlooked what was happening in higher-stage industries. What was going on in iron and steel, for example was this: LTV Corp., Wheeling-

[17] From $60.5 billion in 1981 to $197.2 billion in 1991, in current dollars. *Quarterly Financial Report of the Bureau of the Census*, 1982–1992.

[18] *Minerals Yearbook 1989* (Wshington, D.C.: United States Department of the Interior Bureau of Mine's, 1989), vol. 1, pp. 523–24. U.S. consumption of iron ore from 1980 through 1986 tells the story (p. 554):

Thousands of Metric Tons	
1980	91,983
1981	97,903
1982	57,203
1983	63,050
1984	68,450
1985	66,049
1986	57,513

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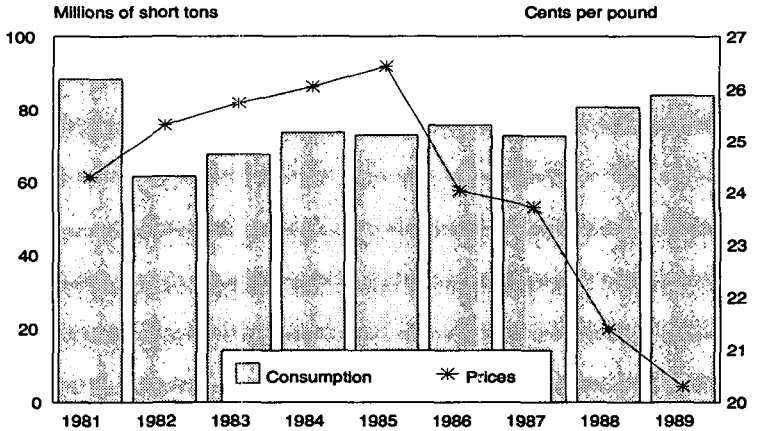

Figure 6. Iron and Steel Consumption and Prices
Source: *Minerals Yearbook 1989*

Pittsburgh Steel Corp. and Sharon Steel Corp., were all forced to file for bankruptcy following the collapse of steel demand in 1985 and 1986. This collapse accelerated the reduction of U.S. steel-making capacity, and triggered a major restructuring of the iron ore and steel industries on both sides of the U.S. –Canadian border.[18]

Figure 6 shows what happened to steel prices after the Federal Reserve stopped inflating the money supply. Consumption of steel failed to regain its 1981 levels in the subsequent decade.

The situation in copper was quite different, but illustrative of the same basic problems. Coinciding with the United States money-supply increases which began in 1981, the U.S. copper industry began a major inventory increase to 275 percent of 1979 levels by 1983. Beginning in 1984, inventories began to fall drastically every year until 1988, until they reached an average of about 14 percent of 1981 levels by 1989.[19]

In figure 7, we contrast long-term borrowing of all manufacturing, retailing, and wholesale firms. Retail borrowing took a nosedive from 1981 to 1982—recession years—and stayed down all during the period when the Federal Reserve was inflating the money supply. Retail borrowing only accelerated in 1987—after the inflation of the money supply was over! Why? Because retail firms borrow

[19] *Minerals Yearbook 1989*, p. 359. Despite this buildup of inventory from 1980-83, world consumption of copper was almost flat from 1980 to 1989. The buildup, therefore, cannot be ascribed to increased demand (p 352).

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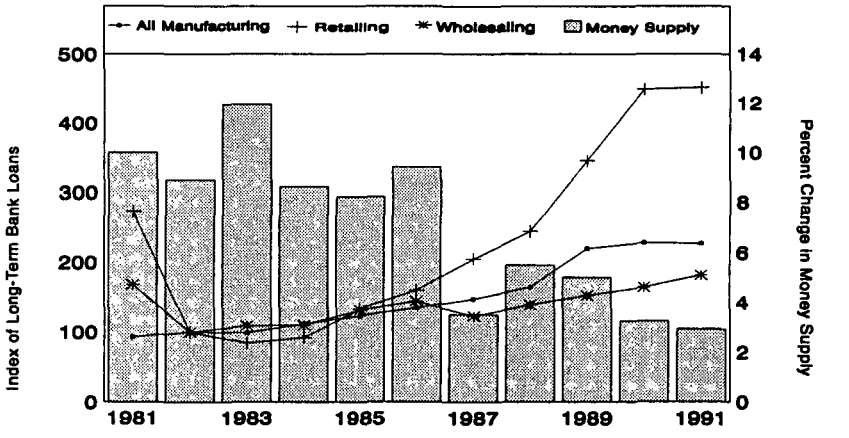

Figure 7. Bank Loans to Manufacturing, Retailing, and Wholesaling
Source: *Quarterly Financial Report 1982–1992* and Federal Reserve *1982 = 100*, adjusted for Producers Price Index

to meet immediate customer demand. Higher-order firms borrow when financing is available on attractive terms.

In the later stages of the boom, consumer spending competes with and overtakes all other types of activity. It is at this point that unused higher-stage capacity materializes because, as Hayek says, "We are unable to use the fixed plant to the full extent because the current demand for consumer's goods is too urgent to permit us to invest in current productive services in the long processes for which (in consequence of 'misdirections of capital') the necessary durable equipment is available."[20] In the last part of the decade, retail use of loan funds, secured to meet expanding consumer spending, dwarfed the growth rates of manufacturing and wholesaling borrowing activities. In a contest, lower stages always win.

The data assembled here provide an illustration of the working of Austrian business cycle theory,[21] namely, that business cycles are caused by government inflation of the money supply, leading to excessive borrowing by higher-stage industries. This borrowing produces a boom which must come to an end when

[20]F. A. Hayek, *Prices and Production* 2nd ed. (New York: Augustus M. Kelley, [1935] 1967), p. 96.

[21]As Friedrich Hayek said in *Monetary Theory and the Trade Cycle* (New York: Augustus M. Kelley, [1933] 1966). "The corroboration of statistical evidence provides, in itself, no proof of correctness. *A priori* we cannot expect from statistics anything than the stimulus provided by the indication of new problems. In thus emphasizing the fact that trade cycle theory, while it may serve as a basis for statistical research, can never itself be established by the latter, it is by no means desired to deprecate the value of the empirical method. On the contrary, there can be no doubt that trade cycle theory can only gain full practical importance through exact measurement of the actual course of the phenomena which it describes." pp. 31–32.

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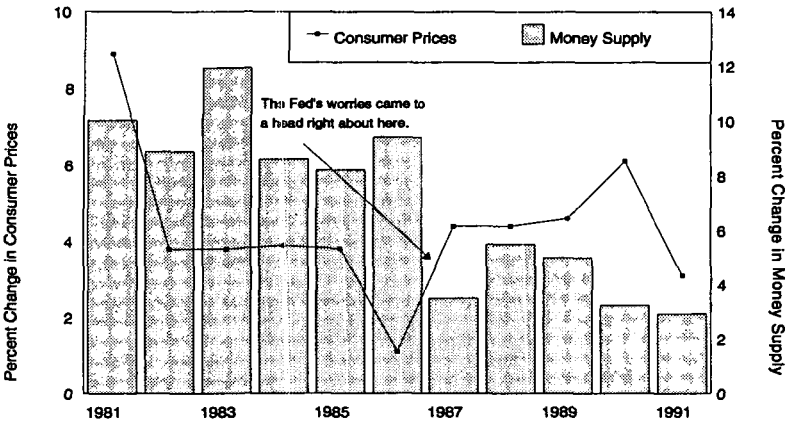

Figure 8. The Fed Loses Its Nerve
Source: Bureau of Labor Statistics and Federal Reserve

the inflationary activities stop—as they must, when the government can no longer continue to stoke the monetary fires with more and more monetary expansion. The end of the boom leads to a crack-up and a recession.

The recession did not begin until 1990, but the seeds were planted in 1981–1986, with the money supply expansion. The recession was triggered in 1987 when the Federal Reserve lost its nerve to continue the inflationary spiral. What caused the Federal Reserve to alter its policy so drastically in 1987?

1987: The Fed Lost Its Nerve

Why the Federal Reserve alters its policies is always a matter for speculation. It is seldom one single thing that is crucial. The Fed worries about inflation, deficits, the money supply, interest rates, and unemployment. But certainly a key concern in the past 20 years has been the value of money, as represented by the consumer price index.

Figure 8 shows one key variable—the consumer price index—against the annual growth rate of M2. The Fed pursued a high inflation policy for 6 years. During all of these years, prices were flat or falling. Then, in 1986, prices began to climb. Eight years previously, in the fall of 1979, the Federal Reserve changed its policies dramatically when it decided to clamp down on double-digit inflation. Its actions produced the recession of 1982, and a halt in the inflationary spiral. Price increases from 1982 through 1985 were held to a flat 3.8 percent per year. The shift was welcome news for the public and for businessmen generally. When price

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increases in 1986 dropped to a low of only 1.1 percent, there was rejoicing in all quarters. But while the Fed leaders were happy about the price levels, there was real concern about the growth of the money supply. Even the non-Austrian Fed economists realized that the country would have to pay for the excessive growth in money at some point. The year 1987 looked like that point.

Consumer price increases, led by medical costs due to Medicare and Medicaid, began to zoom up. When the 1987 rise passed the 3.8 ceiling and kept on rising, the Fed lost its nerve. It put the brakes on money supply increases in a drastic way, and kept them on for the next 5 years. Some would point to this decision and say that the recession of 1990–92 was caused by Fed actions in 1987. That may be true. But Austrians know that that is not the whole story. The actions which led to the recession really took place from 1981–86. Once the money supply was inflated during this period, the actions of 1987–1991 were inevitable, and so was the recession.

During the time between 1987 and 1990, the public was unaware of the time bomb ticking away. Life went on as usual. New businesses were formed at an expanding rate, and business failures were on the decline. Corporate profits from 1987 to 1989 rose by 31 percent. Consumer prices rose by 4.4 to 6.1 percent. Mortgage debt rose by 48 percent from 1986 to 1990, and consumer credit rose by 22 percent in the same period.[22] None of the standard signals showed to Keynesian economists any sign of the impending recession, for one very simple reason: *they were looking in the wrong place*.

Conclusion

Deficit spending and money-supply expansion do not eliminate recessions. They *cause* recessions. This fact will never be understood unless economists and government policymakers stop trying to micro-manage the economy, and start studying what their actions are doing to the structure of production. Heavy inflation of the money supply followed by sharp cutbacks change the rules right in the middle of the game for millions of businesses in the economy.

For the last 40 years, government expansionary policies have stimulated industries to create false and untenable investments. These policies are followed by government corrective actions that destroy those same projects—waste the billions of dollars invested in them, and throw millions out of work. Business cycles are not an essential feature of market capitalism. They are the result of government interference with the market.

[22] *Economic Report of the President* 1993, pp. 411, 433, 434, 447.

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How Different Were Röpke and Mises?

Ivan Pongracic

In *The Wilhelm Röpke Review,* founder and editor Ralph E. Ancil seeks to draw a sharp distinction between the views of Wilhelm Röpke and Ludwig von Mises.[1] Ancil complains that Röpke has been "co-opted into the more or less libertarian thinkers whose position is further enhanced by whatever weight or prestige his name may give." Somehow, Ancil says, libertarians and Austrians presume that Röpke and Mises "are in agreement on all important issues." But, insists Ancil, "nothing could be more incorrect."

Since "nothing" is a strong word, the claim needs to be considered carefully.[2] A good place to begin is with these very Misesian statements by Röpke:

> The conviction that true creative power can prosper only in liberty and not in the graveyard silence of prescribed opinions, that without intellectual individuality society and the state must eventually wither, that man has a right to protection against arbitrary power and the abuse of power, that the crushing of every divergence of opinion and of any individual cast of mind must eventually lead to a boredom in which the nation's intellectual life is stifled, which lacks the happiness of laughter, every sign of humor, and the spice of life, and in which nothing flourishes but the brutish earnestness of the fanatic—that conviction, and nothing else, constitutes the liberal's much-maligned and much-misunderstood *individualism*. Most illiberals take it for an expression of smug materialism.[3]

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[1] Ralph E. Ancil, "Röpke and Von Mises: The Difference," *The Wilhelm Röpke Review* (Winter/Spring 1994): 5–6.

[2] Ancil is not alone among American conservatives in drawing sharp distinction between Röpke and the other Austrians, especially Mises. One example among many: "Unlike many of the 'Austrian' and 'monetarist' economists," writes Gregory Wolfe, "whose ideas about human nature and government are shallow, and influenced primarily by abstract individualism, Röpke was a man of broad culture." *Right Minds: A Sourcebook of American Conservative Thought* (Chicago: Regnery Books, 1987), p. 174.

[3] Wilhelm Röpke, "End of an Era?" (1933), in idem, *Against the Tide* (Chicago: Henry Regnery, 1969), p. 8, emphasis in original.

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> [O]ur often so reckless anti-capitalists would do well to get thoroughly acquainted with the voluminous literature on economics, which demonstrates that in practice socialism must founder on the impossibility of economic calculation in a socialist community.[4]

> [T]he welfare state's compulsory aid paralyzes people's willingness to take care of their own needs and its financial burden considerably weakens people's ability to do so, while on the other hand, this limitation of self-provision makes people more and more dependent upon compulsory public aid and increases their claim on it.[5]

> In spite of its alluring name, the welfare state stands or falls by compulsion. It is compulsion imposed upon us with the state's power to punish noncompliance. Once this is clear, it is equally clear that the welfare state is an evil the same as each and every restriction of freedom.[6]

> [E]conomics as a science has its origin in rational criticism of the naively unscientific government practices of mercantilism.[7]

> Political anarchy leads invariably to chaos. But anarchy in economics, strangely, produces an opposite result: an orderly cosmos. Our economic system may be anarchic but is not chaotic. He who does not find this a wondrous phenomenon and thereby deserving of the most patient study cannot be expected to take much of an interest in economics.[8]

> [T]he "capitalistic" economic process can be compared to a continuing plebiscite in which each piece of currency represents a ballot and in which the consumers, via their demand, are constantly voting to decide what types and amounts of goods shall be produced.[9]

Mises's social philosophy is immediately recognizable. Should Mr. Ancil really be so anxious to disprove the fact that Mises and Röpke are "in agreement on all important matters?" Röpke himself never expressed any disagreement with Mises, and cited Mises frequently on a range of issues from monetary theory to method. Röpke spent his life defending the same cause as Mises—a free society—and using the tools provided by the Austrian tradition to bolster his case.

[4]Röpke, "The Intellectuals and Capitalism" (1931), in idem, *Against the Tide*, p. 28.

[5]Röpke, "Robbing Peter to Pay Paul: On the Nature of the Welfare State" (1958), in idem, *Against the Tide*, p. 210.

[6]Ibid., p. 212.

[7]Röpke, "End of an Era?" p. 91.

[8]Wilhelm Röpke, *Economics of the Free Society* (Chicago: Henry Regnery, 1963), p. 4.

[9]Ibid., p. 197.

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Nevertheless, from the beginning, *The Röpke Review* has been more interested in refuting "laissez-faire" ideology and its "latent nihilism" than in celebrating the common cause of Röpke and the broader Austrian tradition. While preparing the ground for an anti-Misesian onslaught, Mr. Ancil wanted to convince his readers that Röpke and Mises represent two totally different social philosophies. Mises, according to Mr. Ancil, believed in "no enduring values, no permanent things, no absolute truths."

On the one side there is a defender of "a free and truly humane society," who, according to Mr. Ancil, believed that "there is more to life and the economy than technical economics comprehends." On the other side a dogmatic pragmatist, who, although a "staunch defender of freedom and free markets," was too "technical" and "rather short-sighted," about "legitimate government action."

As such, Röpke and Mises differed in three vital areas: first, they had different solutions to the ("false") dilemma of "either socialism or capitalism." Second, they disagreed about the nature of market intervention. Third, they "differ[ed] in their judgments on the sufficiency and character of the competitive system." After analyzing all three, Mr. Ancil concludes that Röpke, although agreeing with Mises "on technical economics," understood better "the broader field of political economy and the important questions of how man should live."

Now, Mr. Ancil is free to believe whatever he wants, and make it public in his journal, but what should worry both Röpkeans and Misesians together is Wilhelm Röpke's reputation among those readers that are not so cognizant of his writings. If we let Röpke speak for himself on these precise points, a different picture emerges.

Wilhelm Röpke was an economist who had a historic opportunity, in 1948, to put Austrian economics to the test and to prove its practical viability. He did it by influencing, from his voluntary exile in Switzerland, his student Ludwig Erhard, the German economics minister.

The result was, of course, an economic miracle. (Röpke himself was constantly emphasizing in his writings that there was nothing miraculous in this. It was simply the application of sound economic principles: "Its success was on the contrary precisely what its architects had expected."[10]) Röpke did express one regret about the reform: it did not go far enough. The post-war reform was imperfect: "residues of collectivism, such as rent control, were scattered about the market economy like unexploded mines, and they proved to be exceedingly difficult to dispose of through normal democratic procedures."[11]

[10]Ibid., p. 247.

[11]Wilhelm Röpke, *A Humane Economy* (South Bend, Ind.: Gateway Editions, 1960), p. 28.

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Later, Röpke realized that Germany was turning away from the principles of the free society, and he tried to stop the socialization of the German economy by describing repeatedly what a free-market economy is all about. Röpke insists that "instead of trying to acquire the facile reputation of a 'social-minded' man by vague demands for a 'just wage,' by railing against 'interest slavery' and 'profiteering,' by emotional outpourings over 'gluttonous landlords,' and real estate 'speculators,' and instead of shoving aside as 'liberalistic' the objections of those who understand something of these matters, one would serve his country better by applying himself to an unprejudiced study of the complex interrelationships of the economy."[12]

He wanted every German to understand that "our economic system stands or fails with competition, since only competition can tame the torrent of private interests and transform them into a force of good. It is competition which sees to it that the high road to profit is entered only by the rendering of an equivalent service (business principle). To restrict competition, then, is to jeopardize the principle of economic reciprocity."[13]

Unfortunately for the Germans, they soon responded to the siren song of a "third way." Their destiny was sealed when Socialist Willy Brandt became the Chancellor; with him, the free-market experiment was finished. Röpke foresaw all this and, like Mises, tried to prevent it. "The history of German economic policy since 1948," Röpke wrote, "has proved that economic freedom is like any other freedom: it must, as Goethe says, be conquered anew each day."[14]

"It cannot be too strongly emphasized that as far as the task of ordering economic life is concerned, we have only this exclusive choice between market economy and command economy," he warned. Then, in a passage which Mr. Ancil apparently overlooked, he made it clear that "[w]e cannot take refuge in some third alternative, in cooperatives, trade unions, . . . or any other form of 'ersatz' socialism. We must choose between price or state command, between the market and the authorities, between economic freedom or bureaucracy. . . . He who chooses the market economy must, however, also choose: free formation of prices, competition, risk of loss and chance for gain, individual responsibility, free enterprise, private property."[15]

Because Germans and other West Europeans refused to listen, "ersatz" socialism is now keeping most Western European countries in deep recession. The European "third road" turned out to be neither "more realistic" nor "more

[12]Röpke, *Economics of the Free Society,* p. 186.
[13]Ibid., p. 236.
[14]Röpke, *A Humane Economy*, p. 27.
[15]Röpke, *Economics of the Free Society,* p. 254.

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humane," as Mr. Ancil would have us believe. Yet, Germany is currently undergoing its greatest economic difficulties since World War II, a result not of integration with East Germany as such, but of welfarism, unsustainable social insurance, inflexible regulations, an investment environment unfriendly to entrepreneurship, an overgrown bureacracy, and a dependent middle class—all the sins of the "third way." Germany's welfare state (and Sweden's and Finland's and all others, for that matter) may eventually come to an end with a bang not smaller than the one produced by the end of Communism.

Ancil, who repeatedly states in his writing that market is not everything (as if Mises ever stated that it was), forgets that both Mises and Röpke understood that the market is the only efficient way of coordinating the actions of producers and consumers. "The market economy has the ability to use the motive power of individual self-interest for turning the turbines of production," writes Röpke, adding that "if the collectivist economy is to function, it needs heroes or saints, and since there are none, it leads straight to the police state." "Nothing could more strikingly demonstrate the positive value of self-interested action than that its denial destroys civilization and enslaves men."[16]

Röpke nails down his message from the "Preface" to *A Humane Economy* (that the book was going to anger, among others, "pure moralists and romantics, who may perhaps cite me as proof of how a pure soul can be corrupted by political economy"[17]), with this conclusion: "Any attempt to base an economic order on a morality considerably higher than the common man's must end up in compulsion and the organized intoxication of the masses through propaganda."[18]

For those who refused to understand this fact, Röpke had little patience: "What overweening arrogance there is in the disparagement of things economic, what ignorant neglect of the sum of work, sacrifice, devotion, pioneering spirit, common decency, and conscientiousness upon which depends the bare life of the world's enormous and ever growing population! The sum of all these humble things supports the whole edifice of our civilization, and without them there could be neither freedom nor justice, the masses would not have a life fit for human beings, and no helping hand would be extended to anyone. . . . Romanticizing and moralistic contempt of the economy, including contempt of the impulses which move the market economy and the institutions that support it, must be as far from our minds as economism, materialism, and utilitarianism."[19]

[16]Röpke, *A Humane Economy*, p. 121.

[17]Ibid., "Preface to the English Language Edition," p. v.

[18]Ibid., p. 121.

[19]Röpke, *A Humane Economy*, p. 106–7. As for the supposed economism of which Mises is sometimes accused, Mises himself says "it was a fundamental mistake . . . to interpret economics

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Röpke's "third road" is thus not about saving us from the market economy (in which "anything goes," according to Mr. Ancil), but about solving our political, social, legal, and moral problems without which the free market cannot exist. Despite Ancil's opinion that, for Röpke, the market "cannot serve its own foundation; it is not self-sufficient; it is not a source of community; and it is not a cure for other ills," Röpke himself made the most important clarification of his own position. "In the absence of a market economy these problems are, in fact, insoluble; only such an economy can guarantee us order in freedom, without which all the rest is in vain."[20]

Röpke explains his "third road" as a road between socialism and a system laden with "super-organization, centralization, Gargantuan concerns, machine giants, mammoth towns, and titanic plans" (hardly a "libertarian" economy).[21] The "third road" is to save us from "boredom" of a system that tends "to centralize and overorganize the economy and society in a way which neglects the human element."[22] It is only "the market economy, with its variety, its stress on individual action and responsibility, and its elementary freedoms, [that] is still the source of powerful forces counteracting [this] boredom of mass society and industrial life, which are common to both capitalism and socialism."[23] The "more we adulterate the market economy with admixtures of intervention, the higher rises the watermark of complusion, the narrower becomes the area of freedom."[24]

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as the characterization of the behavior of an ideal type, the *homo oeconomicus*. According to this doctrine traditional or orthodox economics does not deal with the behavior of man as he really is and acts, but with a fictitious or hypothical image. It pictures a being driven exclusively by 'economic' motives, i.e., solely by the intention of making the greatest possible material or monetary profit. Such a being, say these critics, does not have and never did have a counterpart in reality; it is a phantom of a spurious armchair philosophy. No man is exclusively motivated by the desire to become as rich as possible; many are not at all influenced by this mean craving. It is vain to refer to such an illusory homunculus in dealing with life and history," Ludwig von Mises, *Human Action* (Chicago: Henry Regnery, 1966), p. 62. While Mises thought classical economics was too often caricatured in this regard, he further clarified matters by *insisting* economists should not study *homo oeconomicus* but *homo agens*, i.e. acting man.

In contrast to those who would rank Mises among the materialists, Mises himself writes that "[I]n reality no food is valued solely for its nutritive power and no garment or house solely for the protection it affords against cold weather and rain. It cannot be denied that the demand for goods is widely influenced by metaphysical, religious, and ethical considerations, by aesthetic value judgments, by customs, habits, prejudices, tradition, changing fashions, and many other things. To an economist who would try to restrict his investigations to 'material' aspects only, the subject matter of inquiry vanishes as soon as he wants to catch it." Ibid, p. 234.

Röpke held the identical view: "The ordinary man is not such a *homo oeconomicus*, just as he is neither hero nor saint. The motives which drive people toward economic success are as varied as the human soul itself." Röpke, *A Humane Economy*, p. 121.

[20]Röpke, *Economics of the Free Society*, p. 256.

[21]Röpke, *A Humane Economy*, p. 259.

[22]Ibid., p. 255.

[23]Ibid., p. 87.

[24]Ibid., p. 261.

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The "third road" is also to save us from the economists who are "fascinated by the mathematical elegance of fashionable macroeconomic models, by the problems of moving aggregates, by the seduction of grandiose projects for balanced growth, by the dynamizing effects of advertising or consumer credit, by the merits of 'functional' public finance, or by the glamour of progress surrounding giant concerns."[25] For these people, "the economy takes on the appearance of a giant pumping engine, and it is quite consistent" that economic science "is turning itself into a sort of engineering science. Equations proliferate, while the theory of prices all but falls into oblivion."[26] It is precisely this tendency against which Mises battled during much of his life.

For Röpke, as for Mises, a "[f]ree economy stands or falls with the free entrepreneur and merchant, just as such an economy is inconceivable without free prices and markets. There is no way of defending the free economy against the still powerful forces of collectivism except by having the courage to stand by these central figures of a free economy and protect them from the wave of distrust and resentment to which . . . they are exposed."[27]

There can be no doubt that Röpke was a Misesian in more ways than just "technical economics." In a 1959 tribute, F.A. Hayek credits Röpke for rightly believing that "an economist who is nothing but an economist cannot be a good economist." But this insight, said Hayek, was pioneered by "a man of the preceding generation," Ludwig von Mises, "whose decisive work had just appeared when we concluded our studies." It was Mises's *Socialism* (1922) that first "demonstrated how economic thought can serve as the basis for a comprehensive social philosophy and can provide answers to the pressing problems of the time." Mises provided the model that "determined the common development of our generation," including the writings of Röpke.[28]

The market economy is the *sine qua non* of a free society, and it was positively endorsed by Röpke: "I champion an economic order ruled by free prices and markets . . . the only economic order compatible with human freedom, with a state and society which safeguard freedom, and with the rule of law. . . . There is a profound ethical reason why an economy governed by free prices, free markets, and free competition implies health and plenty, while the socialist economy means sickness, disorder, and lower productivity. The liberal economic system releases and utilizes the extraordinary forces inherent in individual self-assertion,

[25]Ibid., p. 99.
[26]Ibid., p. 247.
[27]Ibid., p. 30.
[28]F.A.Hayek, *The Fortunes of Liberalism: Essays on Austrian Economics and the Ideal of Freedom* (Chicago: University of Chicago Press, 1992), p. 196.

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whereas the socialist system suppresses them and wears itself out in opposing them. We have . . . every reason to distrust the moralizing attitudes of those who condemn the free economy."[29]

Röpke knew that, "however much we may have had to criticize it," it is "impossible to overstate the value of the impersonal integration of people through the market in comparison with their conglomeration in a collectivist economy . . . it does have the merit of coordinating rather than subordinating people. The market and power do not go well together."[30]

The state, on the other hand, is the market's "most immediate and tangible threat . . . I want to repeat this because it cannot be stressed too much. The state and the concentration of its power, exemplified in the predominance of the budget, have become a cancerous growth gnawing at the freedom and order of society and economy."[31] In supposed contrast, Ancil accuses *Mises* of being "dogmatic" and "rather short-sighted" about "legitimate government action." Röpke's final warning against "the eternal romantic's contempt of the economy, a contempt shared often enough by reactionaries and revolutionaries, as well as by aloof aesthetes"[32] was a warning for all the future Ancils to heed.

One might think that *The Wilhelm Röpke Review* would be devoted to what Röpke saw as the real enemy, the planned economy. After all, we remain at the mercy of neo-Keynesian government policy, when government consumes as much as half of the national wealth, when neo-Keynesians are well positioned on the Federal Reserve Board. Why shouldn't John Maynard Keynes (whose economics Röpke described as "a typically intellectual construction that forgets the social reality behind the integral calculus"[33]), his followers, and his legacy, and not Mises, be the focus of attack?

One final note. There was probably less disagreement between Röpke and Mises than between Mises and Hayek, yet it was Hayek who several times emphasized that, although he "wasn't always satisfied by [Mises's] arguments," or found seldom his "arguments to be completely convincing," in the end he "only slowly learned that [Mises] was mostly right."[34] Would that other misguided critics acquire such humility.

[29]Röpke, *A Humane Economy*, p. 6.
[30]Ibid., p. 237.
[31]Ibid., p. 33
[32]Ibid., p. 118.
[33]Röpke, "Keynes and the Revolution in Economics" (1952), in idem, *Against the Tide*, p. 180.
[34]F.A. Hayek, "Introduction," to the German edition of Mises's *Notes and Recollections*, Hans-Hermann Hoppe, trans., *Austrian Economics Newsletter* (Fall 1988): 1–3.

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Calculation and Knowledge: Let's Write *Finis*

Leland B. Yeager

I regret prolonging the discussion, but remarks by Joseph Salerno, Hans-Hermann Hoppe, and Jeffrey Herbener in the first 1996 issue of this *Review*[1] foster the impression that my position is so wrong as to require further discussion. They obscure what the original issue was.[2]

In earlier writings, Murray Rothbard, Joseph Salerno, and Jeffrey Herbener had tried to distinguish between calculation and knowledge problems besetting socialism. F.A. Hayek, they suggested, had shoved aside or perverted the analysis that Ludwig von Mises got straight in the first place. My 1994 article challenged this supposed distinction.[3] I argued that knowledge was intimately bound up with the calculation problem that Mises had diagnosed. Hayek elaborated on points that were implicit and very nearly explicit in Mises's own writings.

Neither Salerno's "Reply"[4] nor his and the other two latest comments justify the supposed wedge driven between the analyses of Mises and Hayek. They do not adequately specify the supposed crucial nonknowledge aspects of the calculation problem that Mises emphasized and from which Hayek diverted attention. Yet

Leland B. Yeager is professor emeritus at Auburn University. He thanks Paul Cwik, Roger Garrison, and Roger Koppl for discussions and other assistance. He thanks Israel Kirzner for an advance copy of "Reflections on the Misesian Legacy in Economics," a highly pertinent paper that now has appeared in the *Review of Austrian Economics* 9, no. 2 (1996):143–54.

[1]Jeffrey M. Herbener, "Calculation and the Question of Arithmetic," *Review of Austrian Economics* 9, no. 1 (1996): 151–62; Hans-Hermann Hoppe, "Socialism: A Property or Knowledge Problem?" *Review of Austrian Economics* 9, no. 1 (1996): 143–49; and Joseph T. Salerno, "A Final Word: Calculation, Knowledge, and Appraisement," *Review of Austrian Economics* 9, no. 1 (1996): 141–42.

[2]I am informed that these authors wrote their contributions separately and that Hoppe did not even have my "Rejoinder: Salerno on Calculation, Knowledge, and Appraisement," *Review of Austrian Economics* 9, no. 1 (1996): 137–39, in mind. Nevertheless, their comments, especially happening to appear together immediately following my "Rejoinder," foster an impression that, along with their substance, requires correction.

[3]Leland B. Yeager, "Mises and Hayek on Calculation and Knowledge," *Review of Austrian Economics* 7, no. 2 (1994): 93–109.

[4]Joseph T. Salerno, "Reply to Leland B. Yeager on 'Mises and Hayek on Calculation and Knowledge'," *Review of Austrian Economics* 7, no. 2 (1994): 111–15.

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Hoppe says that "Hayek's distinct contribution to the debate was fallacious from the outset"[5] and "false, confusing, and irrelevant"[6]; Hayek's thesis is "absurd" and "nonsensical."[7]

Hoppe blames Hayek for playing down the importance of private property. But the whole discussion concerned an inherent flaw of socialism, conceived of as government ownership and administration of the means of production (as socialism was indeed generally understood when Mises wrote his critique). The whole discussion concerned *why* a system of private property and private enterprise is much superior to socialism. Mises and Hayek went beyond merely trumpeting this superiority. In setting forth the calculation problem, both were explaining *reasons* why the private-property system is superior to socialism.

Salerno[8] says I make a "very important concession" to his position. Formerly I held the Hayekian position that past prices automatically convey to all passive producers "all the knowledge that is relevant to their business decisions in a near-equilibrium world." Now I concede that "knowledge is a primary matter of individual entrepreneurial experience, hunches," and so forth. In saying so, Salerno misstates Hayek's position, and mine, on the role of knowledge in an adequately functioning economy. In his celebrated article of 1945, Hayek[9] explained why the decentralization of decisions is essential for using knowledge even of kinds that can*not* be communicated by prices. As long-time students of the classics of Austrian economics, Salerno and I should concede each other a grasp of Hayek's seminal article. Misstatement of Hayek's and my positions draws still another red herring across the original issue of the supposed wedge between Mises and Hayek.

More than any other single passage in the three comments of 1996, the concluding paragraph of a footnote in Herbener[10] pushes, however unintentionally, against the bounds of academic propriety. It unavowedly shifts ground while attributing to the opponent a position he never held. According to Herbener, neither he nor Salerno nor Rothbard nor Mises "claim that the central planners do not face an information problem. The SRH [Salerno, Rothbard, and Herbener] claim is that Mises's calculation argument has more to it than the information problem. Yeager's claim [is] that it does not." Furthermore, Herbener begins his 1996 comment with this remarkable statement: "The view that

[5]Hoppe, "Socialism: A Property or Knowledge Problem?": 143.

[6]Ibid.: 146.

[7]Ibid.: 144.

[8]Salerno, "A Final Word."

[9]Friedrich A. Hayek, "The Use of Knowledge in Society," *American Economic Review* 35 (September 1945): 519–30. Reprinted in idem, *Individualism and Economic Order* (London: Routledge and Kegan Paul, 1949), pp. 77–91.

[10]Herbener, "Calculation and the Question of Arithmetic": 158–59.

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Ludwig von Mises had more in mind in his calculation critique of socialism than the Hayekian knowledge problem has recently been attacked by Leland Yeager."

I ask the fair-minded and attentive reader whether this is a correct statement of my position. I never denied that there might be more to the calculation problem than the knowledge aspect. I was challenging SRH to specify just what that other aspect was. More particularly, I was challenging them to justify their sharp distinction between the two (or more?) aspects. What nonknowledge aspect is so distinct and central that Hayek's elaboration of the knowledge aspect is diversionary and, to use Hoppe's words, "false, confusing, and irrelevant," "absurd," and "nonsensical"? I ask the impartial reader to find any passages in which Salerno, Hoppe, and Herbener have squarely faced my challenge. Have they not, instead, merely obfuscated their failure to do so?

Of course arithmetic enters into economic calculation. People making business (and consumer) decisions use arithmetic all the time. Herbener makes much of people's not being able to add apples and oranges. Money prices are needed for calculation, for commensurability, for arithmetic, for comparing values and costs and, for recognizing gains and losses. Sure, all this is a standard part of the logic of the market and money. It is a standard part of the argument about why socialism could do nowhere near as well as capitalism in putting scattered knowledge to use. But none of this helps refute my refutation of a supposed sharp wedge between the positions of Mises and Hayek.

Herbener's points about incommensurate units (apples and oranges) are further symptomatic of a particular style of argument worth identifying so that readers can recognize it when it occurs. I am not aware of any generally accepted name for it, but having one would be useful. Anyway, it works this way. Make lots of valid statements as if they were highly relevant to the issue at hand and as if one's opponent in discussion were nevertheless ignorant of them. These valid points, in the present instance, are roughly of the nature of $2+2=4$, grass is green, demand curves slope downward, and private property is essential to a decently-functioning economy. Perhaps the unalert reader, after agreeing with valid (but diversionary) points for page after page, will get the impression that they demolish the opponent against whom they are ostensibly deployed. (Sometimes, though not in the present instance, this style of argument carries a further twist: even though the facts and figures deployed are not really relevant, make them detailed, numerous, and recondite enough to foster the impression that the speaker or writer is a consummate expert on his topic.)

Not only on the socialist-calculation issue but on the other topics also, Salerno, Hoppe, and Herbener, like Rothbard before them, work to distinguish

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between Hayek's and Mises's positions. (I particularly have in mind articles on "dehomogenization" in various issues of this *Review*.) A reader not very familiar with Austrian economics might get the impression that Hayek-bashing is under way. Surely (or so I hope, anyway) no one wants to let this impression prevail.

I'll try to conclude what I hope is the entire debate in this *Review*. On any reasonable interpretation of exactly what calculation means in the debates over socialism, calculation is closely intertwined with the development and use of knowledge. One ill-serves Mises's reputation and ill-serves understanding of momentous issues by trying to drive a wedge between Mises and Hayek, specifically, by imagining and overemphasizing (yet not specifying) some aspects or other of calculation crucially distinct from the knowledge aspects on which Hayek elaborated, all while disparaging Hayek's elaborations. A correct understanding of the socialist-calculation problem is important to economic theory, the history of economic thought, twentieth-century economic history, and future policymaking. I hope that we respectful students of Mises, Hayek, Rothbard, and other great Austrian economists can subordinate polemics among ourselves and can collaborate in achieving and spreading this correct understanding.

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Perfect Competition and the Transformation of Economics. By Frank M. Machovec. New York and London: Routledge, 1995

Professor Machovec of Walford College has written what might be called a monograph in the history of economic thought, dealing with the economic profession's adoption of the general equilibrium theory as the starting point of all economic analysis. He argues that this revolution, which took place in the 1920s, radically altered the way economists would come to view economic phenomena. The acceptance of this new "paradigm" meant the abandonment of specific ideas associated with classical economics.

The importance of this book is Machovec's documentation of how the adoption of empirical methodology leads to the abandonment of key classical concepts and leads to the adoption of an anti-market bias. "The classical description of the market process—a broad tapestry which explains much but provides no concrete mathematical predictions—came to be considered useless and thus was no longer defined as a legitimate theory in the sense of positive science" (p. 269). Having abandoned the view of the market as an ongoing process of resource allocation, the way was clear for the adoption of utopian and activist policies.

Machovec discusses anti-trust law and international trade as areas where unintended and disastrous results have also occurred as a result of the link between the methodology of the economists and their policy recommendations. Quoting Hahn, "it is the models that lead people to view the economic systems as they do" (p. 309).

International trade and development economics is another area where the knowledge and wisdom of classical economists have been ignored or abandoned, leading to specific policy recommendations which, when practiced, cause disastrous, unintended results. "We should not underestimate the damage wrought by Walras's entrepreneurless and, hence, non-market vision of the economy, a vision which has made intrusions by government appear efficacious in far more areas than would otherwise be the case" (p. 305).

Those who have become dubious of the government's interference in the market will appreciate the insightful connection between the question of methodology and the type of government policies engendered by that methodology, the discussion of the intellectual history of the profession and the explanation of

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how the profession has come to its current state is one of the most interesting and useful portions of *Perfect Competition*.

The adoption of general-equilibrium theory has trained economists to look at problems in a certain narrow way. Professor Machovec defines five distinct areas where adoption of the perfect-competition model has had deleterious results: an explanation of price change, modeling and predictability, the re-definition of monopoly, and the dependence on central planning in international trade. Price change, and its significance, is a key classical concept which Machovec argues was abandoned as a result of the adoption of Walras's perfect-competition model. The classical economists viewed price changes as the result of entrepreneurial initiative in the way of new products, methods, and elimination of imperfect markets by arbitrage, etc. After the adoption of Walras's model, all prices were assumed to be at equilibrium and were changed only by exogenous forces outside normal market dynamics. This assumption led to the questionable attempt to mathematically determine production levels. An additional notion of the classical economists which the neoclassical economists abandoned was the important role of the entrepreneur as the innovative force driving the economy, and the idea of the consumer as the ultimate and final source and authority for deciding through the price system which goods get produced and in what quantity.

The acceptance of Walras's equilibrium theory leads logically to the now-common practice of modeling and prediction. "For the classical case, in which information is revealed incrementally, the equilibrium price vector is solely an *ex post* phenomenon and hence cannot be determined (calculated) *ex ante*. . . . The culmination of such a process is a set of equilibrium prices and quantities *different* from those yielded mathematically by Walras's system of simultaneous equations, yet Walras erroneously believed that his model's prices were identical to the market's equilibrium prices"(p. 5).

The abandonment of the view of entrepreneurship as a benefit to society and the adoption of equilibrium, Machovec argues, redefined the role of the entrepreneur as harmful under the static models of the neoclassical economists. Machovec shows the effect this has had on anti-trust policy in the way of Supreme Court decisions. Machovec echoes Coase: "As static neoclassical models became understood by jurists, business practices whose efficiency rationales were subtle—and hence not easily explicated by defense teams—were routinely yet incorrectly imparted to the existence of monopoly power. More harm than good has flowed from the inflexible application of the perfect-competition benchmark as 'the measure against which particular [anti-trust] policy and actions are first tested'" (p. 201). The classical economists viewed the market as a self-regulating mechanism against monopoly if there was ease of entry. The substitution of a different criterion as

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opposed to the "ease of entry" of the classical economists led to anti-monopoly legislation which was not in the best interest of the consumer. He quotes Baumol and Ordover, "Anti-trust can and probably does serve as a vehicle for rent seeking and as a means to prevent 'unfair competition,' meaning any competition that threatens to make life uncomfortable for rivals . . . To this extent, rather than promoting static efficiency, anti-trust legislation may serve to undermine it" (p. 228). The result has been anti-trust legislation which has failed to encourage competition to the detriment of the consumer.

In the same vein of anti-trust legislation, Machovec details how similar counter-productive policies have resulted in the area of international trade, and shows the important connection between methodology and policy. The overall result of Walras's influence has been an anti-free-market prejudice and a statist activist government bias. One can only conclude that the understanding of the classical economists has to some extent become almost a body of lost knowledge. The frightful idea lurking in the background from all this is that the economics profession is filled with PhDs who view their profession as the exercise of the correct "test" from their "toolkit" but actually have little conceptual understanding of economics.

On balance, despite the excellent scholarship and informative history, the book is not without its flaws. *Perfect Competition* was sponsored in part by the Austrian economics program at New York University, and one can no doubt safely assume a fair amount of familiarity on the part of the author with the works of Carl Menger and the methodological positions of the Austrian economists. Although Professor Machovec's criticisms may ring with resonance in the hearts of Austrian economists, it would be a mistake to count Professor Machovec among the members of the Austrian school. He explains, "As one who holds undergraduate degrees in mathematics and meteorology, I am an equivocal supporter of the value of formalism in economics. I fully concur with Jevons's observation that in a discipline devoted to the study of small marginal effects, the widespread employment of calculus is inescapable" (p. 9). We do not have here an author who is calling for a fundamental change in the method and philosophical foundations of the discipline, but rather a reform in the de-emphasis of general-equilibrium theory. "My purpose, however, is not to criticize the abstract nature of perfect competition nor the model's frequent employment as an analytical tool. I readily concede that equilibrium models play a cardinal irreplaceable role in the study of the process of competition. My primary objective is to demonstrate that the adoption of perfect competition as the benchmark—and the employment of static models as the only acceptable engines of market analysis—combined to transform . . . economics!" (p. 9).

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The author fails to follow the force of his argument to its compelling conclusion: the rejection of empirical methodology. He is content instead to merely suggest a de-emphasis of the perfect-competition theory. But this recommendation is inconsistent, and fails to deal directly with the fundamental flaw and problem of the economics discipline and that is the adoption of the method of physics on a foundation of positivist presuppositions.

Only the Austrian school of economics has carried on the methodological tradition of the founders of economics. The problems and waning prestige of the economics profession will continue until the Austrian methodological position is once again the accepted orthodoxy.

Perfect Competition and the Transformation of Economics, despite this flaw, is a valuable and worthwhile contribution to understanding the history of economic thought and will be enjoyed for its informed insights and trenchant analysis.

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Pop Internationalism. By Paul Krugman. Boston: MIT Press, 1996

Paul Krugman owes much of his considerable reputation as an economic theorist to "new trade theory." In contrast to traditional trade theory, supporters of the new view deny that free trade is always advantageous: the exceptions largely concern cases of "increasing returns." "It's obvious that the new trade theory introduces the possibility that government action can, in effect, *create* comparative advantage" (p. 110). Government action does this, one gathers, by promoting large-scale production in industries where increasing returns obtain. In pursuit of this end, tariffs may be a useful tool; such is the new wisdom of "strategic trade policy."

Krugman does not renounce the new theory—far from it. With forthright immodesty, he declares the new "sophisticated" theory, of which he was a principal developer, "part of the mainstream of economic analysis" (p. 109). But he dislikes intensely the use that has been made of the new theory by writers he damns as incompetent and economically illiterate.

The writers who arouse our author's ire include Robert Reich, currently Secretary of Labor, and the MIT economist Lester Thurow. They wrongly think of international trade as if it were a "zero-sum" game, to use a phrase from the title of a best-selling book by Thurow. In this view, one party's gain in trade is another's loss. Trade becomes an instrument of economic warfare.

In fact, of course, the situation is quite otherwise. Trade does not take place unless both parties expect to benefit from it; unlike war, the gain to one party does not depend on the loss of another. Further, trade can still be advantageous even if one country is, in all goods traded, inferior in productivity to its trading partner. As David Ricardo long ago demonstrated, "a country will always find a range of goods in which it has a 'comparative advantage'" (p. 91).

Proponents of strategic trade make a great deal of fuss about the supposed need for international "competitiveness." This elusive concept appears to consist, in large part, of a nation's having a "favorable" balance of trade. Krugman isn't buying: "Both in theory and practice a trade surplus may be a sign of national weakness, a deficit a sign of strength" (p. 6). Contrary to widespread belief, deteriorating terms of trade have not been "a major drag on the U.S. standard of living" (p. 8).

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Wherein lies the fundamental fallacy of the strategic traders? They think of nations as if they were rival firms in competition for a market. But "countries do not compete with each other the way corporations do . . . the major industrial countries, while they sell products that compete with each other, are also each other's main export markets and each other's main suppliers of useful imports" (p. 9). International trade should not be viewed, in a parody of Clausewitz, as "the continuation of war by other means," our new traders to the contrary notwithstanding.

Krugman's case may in one respect elicit surprise. As he himself is at pains to stress, he is saying nothing new. He merely restates and reiterates commonplaces of economic analysis. Here precisely arises the element of surprise. Why do such elementary points require restatement in this day and age? Surely authors of the stature of Reich have already taken account of them.

In fact they have not. Krugman mercilessly exposes many supposed eminences as ignoramuses of the first order. He comments, for example, on a passage on international trade by the Yale historian Paul Kennedy as follows: "did you find the quotation from Professor Kennedy hysterically funny. . . . Kennedy feels that he is in a position to discuss the idea of comparative advantage . . . *without understanding the idea*" (p. 86). Readers will discover that this hapless historian is but one of many offenders.

Students of Austrian theory will be reminded of a case that closely resembles the situation Krugman has depicted. After Mises argued that economic calculation under socialism is impossible, sophisticated economists, notably Oskar Lange and Abba Lerner, devised models of so-called market socialism which, they claimed, *could* accomplish the task of calculation.

In my view, Mises and Hayek more than adequately dispatched these models. But, regardless of how one judges the dispute, there is another point that demands attention; and here is where the parallel with Krugman's case arises. The Lange–Lerner models were abstractions that bore no relation to actually existing socialist economics. Even if correct, they would have no bearing on the question, can socialism in the actual world solve the calculation problem?

Nevertheless, socialists acted as if the mere existence of these models sufficed to dispose of the calculation problem. In like manner, the strategic traders take the very limited claims of the new trade theory to have demolished altogether the basic Ricardian case for free trade. The plans of Reich and company are not correctly derived from the new theory. Nevertheless the mere existence of the new account somehow is supposed to redound to their benefit.

Readers who do not like loose ends may be inclined to raise a further point. Just as the Lange–Lerner models do not succeed in answering Mises (or so

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Austrians would claim), is there likewise a fallacy in the arguments of Krugman and his fellow new traders that the case for free trade is in theory flawed?

To answer this far exceeds my competence; and Krugman's devastating ripostes should be sufficient warning against any temptation to stray across disciplinary boundaries. But I shall venture one remark about the normative implications of the new theory, which our author acknowledges "are much more controversial" (p. 110) than the descriptive part of the theory. Krugman informs us that "clever government intervention cannot only shift the pattern of comparative advantage, but also do so in a way that raises the intervening country's real income at the expense of other countries" (p. 110). Those who have taken their Mises and Rothbard to heart may wonder why "a country's real income" has any place at all in a sound welfare economics.

Throughout his book, Krugman has been concerned to assert the prerogatives of economic theory. Those not expert in these deep matters should not presume to comment on them. Our author's claim to authority rests on indisputable credentials; but at one point, I venture to suggest, he has gone beyond his area of specialized knowledge.

In defense of the Nafta Agreement, Krugman admits that Nafta supporters "considerably glamorize the reality" of the treaty's supposed economic benefits. In fact "NAFTA will . . . produce only a small gain in overall U.S. real income" (p. 157).

Why, then, does Krugman wax enthusiastic over the arrangement? For him, Nafta is primarily a foreign policy issue; it is needed to promote the stability of the Mexican government. "For the United States, this agreement is not about jobs. It is not even about economic efficiency and growth. It is about doing what one can to help a friendly government succeed" (p. 165). If Krugman is right about Nafta's lack of economic impact, then he exits the scene as an expert on the treaty's merits. *Prima facie*, his opinions on foreign policy merit no more consideration than those of any other layman. Those less inclined than our author to view the Salinas government as a fit object of idolatry need here pay him no heed.

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The Road From Serfdom: The Economic and Political Consequences of the End of Communism. By Robert Skidelsky. Allen Lane: Penguin Press, 1996

If Robert Skidelsky is right, the twentieth century has been dominated by a conflict that ought never to have happened. Throughout most of the century, collectivism was the order of the day. (By a collectivist society, Skidelsky means "one in which state purposes have replaced private purposes in shaping economic and social life" [p. 17]). No longer, American and European intellectuals held, could a nation's economy be entrusted to private enterprise. The immense efforts at national unity manifest during the world wars, not to mention the glories of Bolshevism, demonstrated what state direction could achieve. Only since the 1980s has this roseate view of state power encountered attacks among the self-styled intellectual elite.

As Skidelsky fully recognizes, collectivism from the first was a false path. "Enrico Barone (1908) and Ludwig von Mises (1920) had argued that efficient Communism was an impossible dream because if all capital were publicly owned there would be no market for capital goods in terms of which competing investment projects could be properly costed" (p. 80). Incidentally, Skidelsky deserves credit for defying the legend, propagated by Schumpeter, that Barone had refuted Mises in advance of his 1920 article.

True enough, not all collectivism takes the explicit form of socialism. But, as Mises also demonstrated, intervention offers no "third way" between capitalism and a fully-collectivized economy. Interference with the market inevitably fails to secure the results its advocates promise. Faced with failure, the government must either retreat to the market or press on with further intervention, in a futile effort to repair the damage. If the government endeavors to pursue the interventionist "cure" for the selfsame disease, the result eventually will be socialism.

But if the socialist calculation argument is right, how did socialism manage to survive in Soviet Russia for 70 years, apparently confounding its critics? Skidelsky appeals in reply to a surprising source, John Maynard Keynes. Our author, an outstanding biographer of Keynes, has pursued for many years the quixotic project of proving Keynes to be a classical liberal. In the course of his

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futile quest, Skidelsky has succeeded in uncovering some genuine insights in Keynes's work.

Concerning the Soviet economy, Keynes, in his *Short View of Soviet Russia* (1925) notes that "[e]xploitation was accomplished by the state's procurement policy. Their import and export monopoly and virtual control of industrial output enabled 'the authorities to maintain relative prices at levels highly disadvantageous to the peasants. They buy his wheat from him much below the world price, and they sell him textile and other manufactured goods appreciably above the world price'" (p. 51, quoting Keynes).

Thus the Soviet state, established in protest against alleged capitalist exploitation, maintained itself precisely through exploiting the peasants. By this means, and other types of predation, the Soviet government staved off, though it could not ultimately escape, the disaster foretold by Mises. Though the Soviet economy operated at a low level of efficiency, it did, after all, function, and this was enough for those enamored of planning. The features of the Soviet economy that Keynes identified "were to form the core of the economic policies of most developing countries in the 1970s" (p. 51).

But here an objection is likely to strike the reader. If a socialist economy can limp along for a period of time, what is so good about that? How can anyone rationally prefer planning to the abundance a free economy provides? Skidelsky, adopting the term of Sir John Hicks, argues that modern collectivist regimes have reverted to the "revenue state" of pre-capitalist times. In these, "the wealth of subjects and foreigners alike was considered fit for rulers to command at will, for their greater power, splendor, and prestige" (p. 27). Readers of libertarian bent will not fail to note the parallel between Skidelsky's and Hicks's claim and the Oppenheimer–Nock view of the state as predator.

But more than the self-interest of predators is required to explain the sway of collectivism. Skidelsky assigns much of the blame to leftist intellectuals, entranced by the prospect of reconstructing society to their liking. "Collectivism was an intellectual construction . . . largely created by a new class of social philosophers, engineers and scientists, often made up of marginal academics, who saw themselves as a rational directing elite 'above class'" (p. 39).

Skidelsky has expertly diagnosed the key economic problem of our time, and the remedy appears obvious. If collectivism, doomed to inefficiency, exists principally to benefit exploiters, must it not at once be replaced with a complete system of free enterprise capitalism? Since socialism cannot work, and interventionism leads to socialism, what other choice remains?

Unfortunately, for our author, matters are not so simple. He himself, it transpires, accepts a considerable measure of interventionism. "The failure of

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collectivism everywhere led to the mistaken view that the state could do almost nothing and the market almost everything. Yet the theory of the liberal state is built on the concept of market failure. We need states because there are missing or failing markets" (p. 187). Like almost all economists save Austrians, Skidelsky thinks that the free market cannot efficiently produce public goods.

Further, like his master Keynes, our author contends that government action is needed to remedy the vagaries of the business cycle. "Economies can linger in a situation of 'underemployment' for a long time till something turns up which causes entrepreneurs to regain their optimism" (p. 73). Left to itself, the market falls victim to irrational changes of mood by speculators.

This is not the time or place to examine fully Skidelsky's case against the market. I confine myself to two observations. If, as our author thinks, the free market cannot supply public goods, how can it be that "public goods theory gives an elegant explanation of the social contract" (pp. 21–22)? Why would not the same public-goods problem block a social contract to establish a state? And if resources are misallocated owing to "inescapable uncertainty," how can Keynes be said to have "established the possibility of 'underemployment equilibrium'" (p. 73)? Surely what is here described is a state of disequilibrium.

These observations of course do not suffice to overturn Skidelsky's indictment of the market. But this is not the key point at issue. For suppose Skidelsky is right. Then exactly the case against intervention he has elsewhere in the book so eloquently advanced tells against his own proposals. The interventions he favors will necessitate more and more supplementary interventions, and the result will be the collectivism Skidelsky deplores.

Our author would no doubt dissent. The interventions he supports, as opposed to those the collectivists demand, are strictly limited. But I doubt that this contention can be sustained. The category "public goods," in his usage, is not well-defined, and a virtually-unlimited statist agenda can be squeezed within its confines. And collectivists have been quick to seize upon Keynesian fiscal policy to advance their cause.

Skidelsky's devotion to a free society cannot be doubted, but his attempt to discover in Keynes the savior of capitalism is a *fata morgana*. In the pursuit of his case, though, our author explores an issue that Austrians will find of major importance. As the title of his book suggests, Skidelsky has been much influenced by Hayek; and he attempts to show that his own support of a "mixed" capitalist system echoes Hayek's views.

In this endeavor, he achieves considerable success. During World War II, Hayek endorsed Keynes's plan for "progressive taxes and deferred pay" (p. 74). Further, in *The Road to Serfdom*, Hayek "was careful not to identify economic

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liberalism with laissez-faire—a mistake made by liberal thinkers in the nineteenth century. . . . Hayek himself thought that a world government would be needed to entrench economic liberalism internationally" (pp. 81–82). Connoisseurs of the Mises–Hayek dehomogenization dispute, take note!

Whatever one's disagreements with our author's view of the market, one can only admire his grasp of the details of the collectivization debate, and his ability to illuminate historical events by means of economic theory. His account of the debate between Jeffrey Sachs and John Gray on "shock therapy" (pp. 167–73) is especially valuable.

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A Mathematical Approach to Proportional Representation

Duncan Black on Lewis Carroll

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This book has been edited from the manuscripts of the late Scottish economist Duncan Black. Shortly after the publication of *The Theory of Committees and Elections* Black started to collect material for papers and a book on Lewis Carroll's theory of proportional representation. Black's chapter plans made it clear that the book was to be in three parts, written by himself, followed by a reprint of Carroll's *Principles of Parliamentary Representation* and its main sources. Part I is biographical, introducing Lewis Carroll and giving relevant details of his life. Part II is Black's already published work on Lewis Carroll. Part III comprises the more detailed arguments about Carroll's reasoning, and Part IV contains reprints of rare original material on proportional representation by Carroll, James Garth Marshall, and Walter Baily. Taken together, the editors have provided a complete reference source for the theory of voting and proportional representation.

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